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ANALYSIS TO UPDATE ENERGY EFFICIENCY POTENTIAL, GOALS AND TARGETS FOR 2013 AND BEYOND

APPENDIX VOLUME I

APPENDIX A

Prepared for:
California Public Utilities Commission

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1.1.1 Technical, Economic, and Cumulative Market Savings Potential

Figure 1 presents the technical, economic and cumulative market energy savings potential for existing residential buildings in PG&E service territory. Technical energy savings potential varies from approximately 5,000 GWh (in 2010) to 4,000 GWh (in 2024). The economic potential follows a similar path and varies from approximately 4,400 GWh (in 2010) to approximately 3,500 (in 2024). Cumulative market potential has a variant path that begins at 3,500 GWh (in 2010) and ends around 2,200 GWh in 2024. The sharp decrease in 2018 is due to a change in codes and standards for residential lighting. This phenomenon is explained in detail in Section 3 of the main report.

Figure 1. PG&E Residential Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

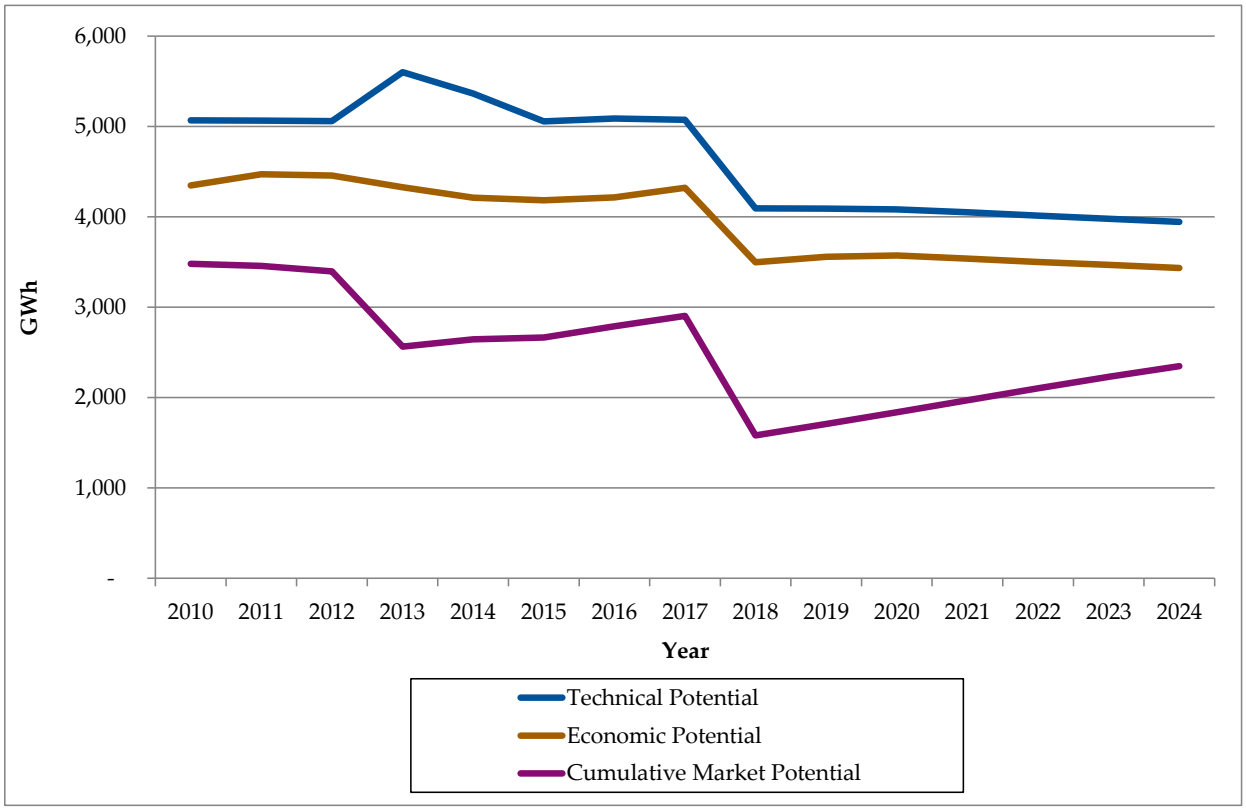
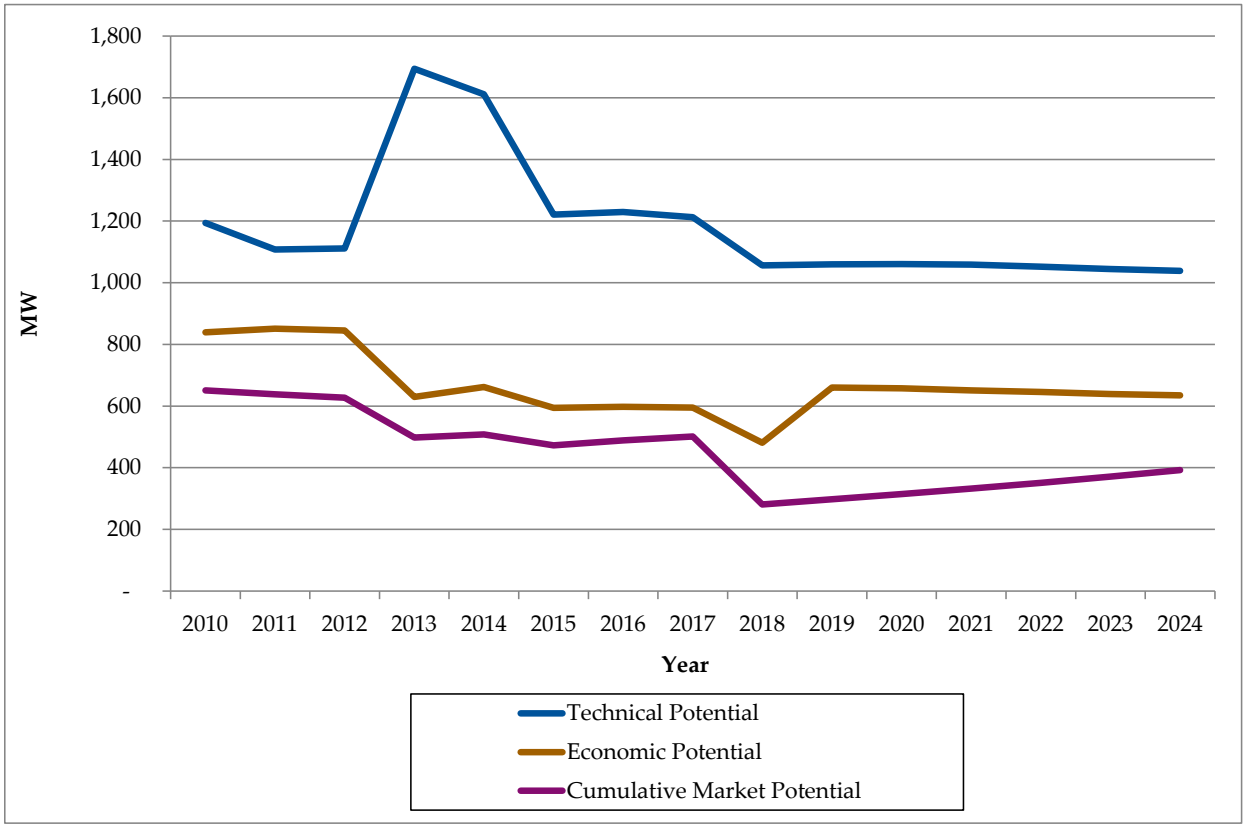


Figure 2 presents the gross technical and economic demand savings potential in PG&E service territory from 2010 through 2024. The economic and cumulative market potential curves for demand savings follow a similar trend to the energy savings economic and cumulative market potential curves. The demand savings technical potential curve however, shows an increase in demand savings potential in 2013. This is due to the introduction of ETs to utility portfolio and due to HVAC measures. ETs and

HVAC measures have a high demand to energy savings ratio as compared to other residential measures; they drive the technical demand savings potential. These measures do not contribute significantly to the economic potential as they do not pass the cost test (Total Resource Cost test) screen.

Figure 2. PG&E Residential Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



1.1.2 Gross Incremental Market Potential

The gross incremental market potential for existing residential buildings in PG&E service territory is presented in Figure 3. The gross incremental market potential is calculated to be approximately 800 GWh in 2010 and sharply falls to approximately 175 GWh in 2013 due to codes and standards and flattens out at approximately 150 GWh for the rest of the forecast period.

Figure 3. PG&E Residential Gross Incremental Market Potential for 2010 through 2024 (GWh)

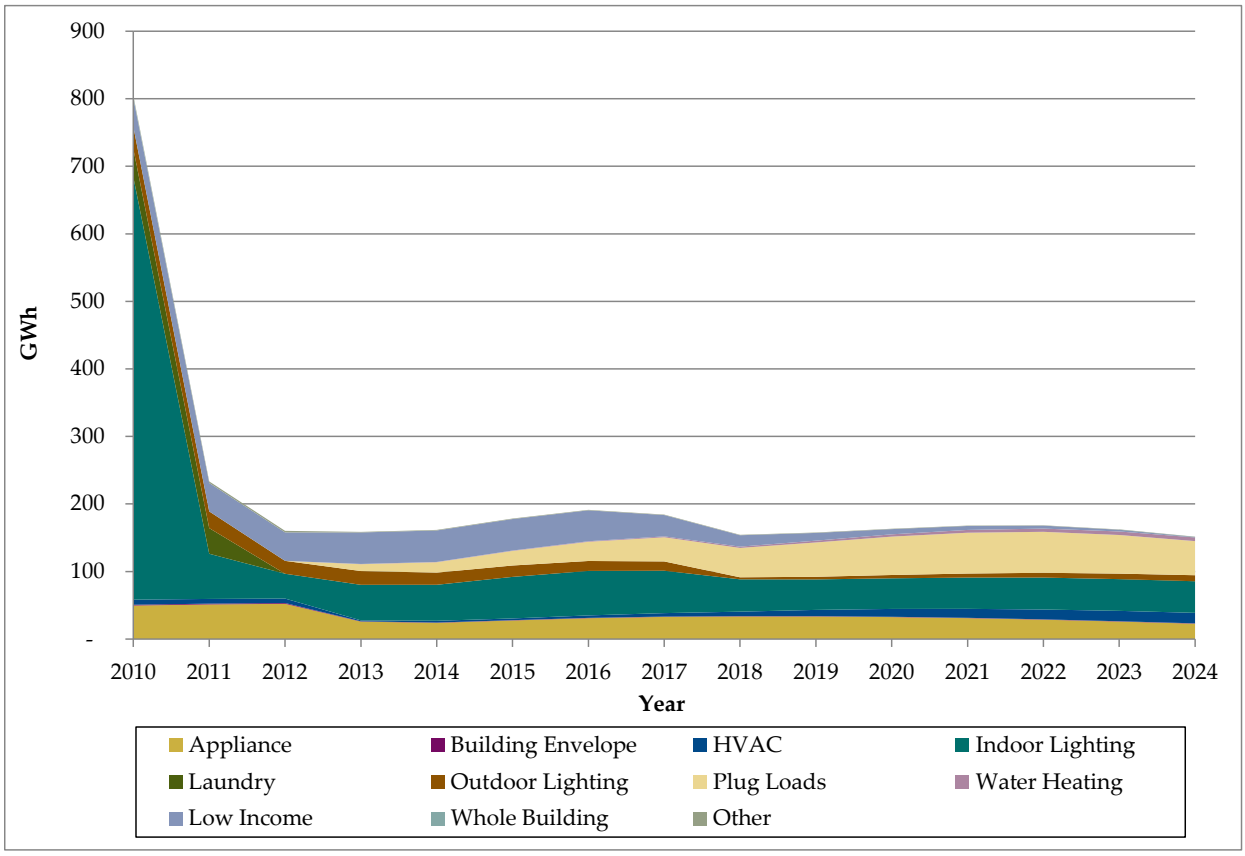
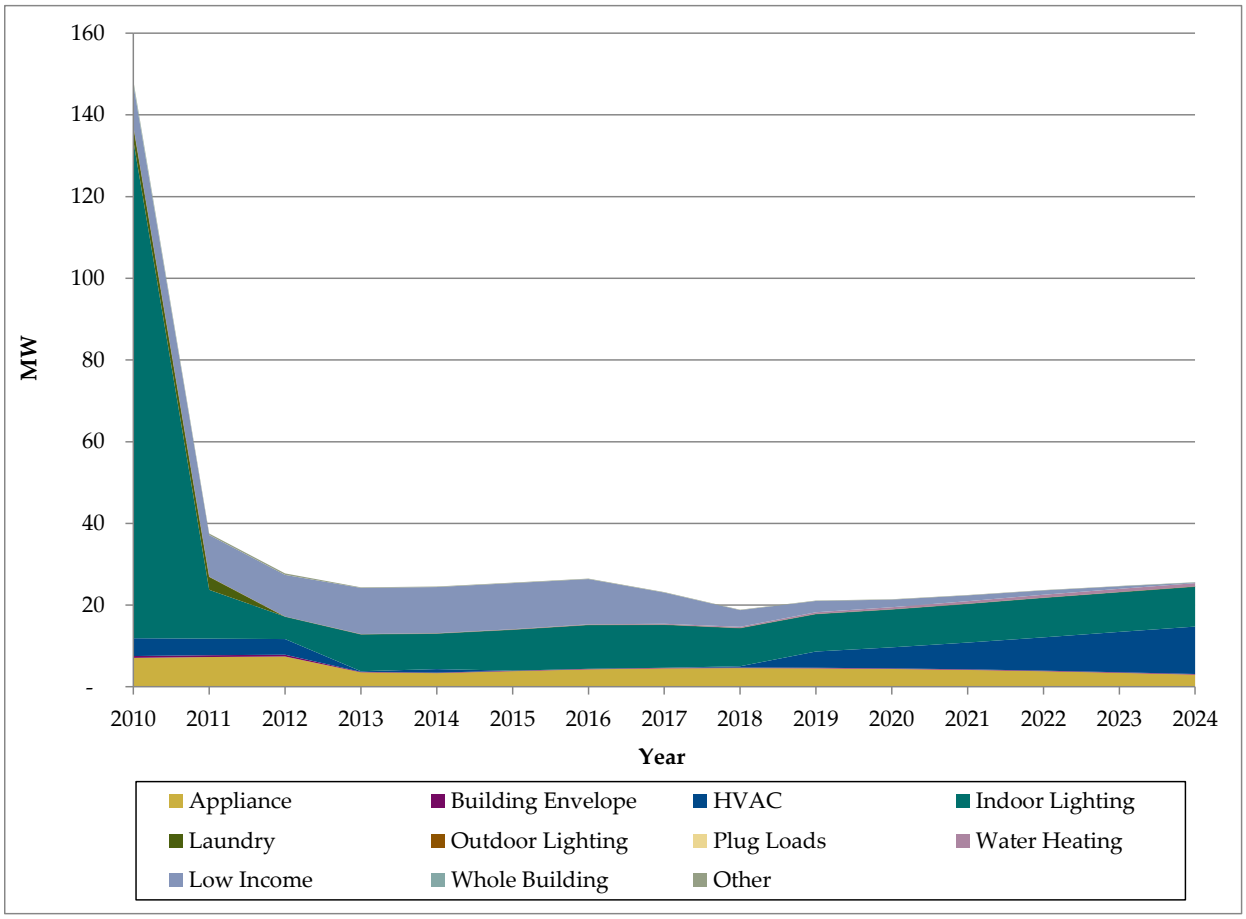


Figure 4 presents the gross incremental demand savings potential for existing buildings in PG&E service territory. This graph follows a trend very similar to the gross incremental energy savings potential curve. It varies from 140 MW in 2010, to approximately 20 MW in 2024.

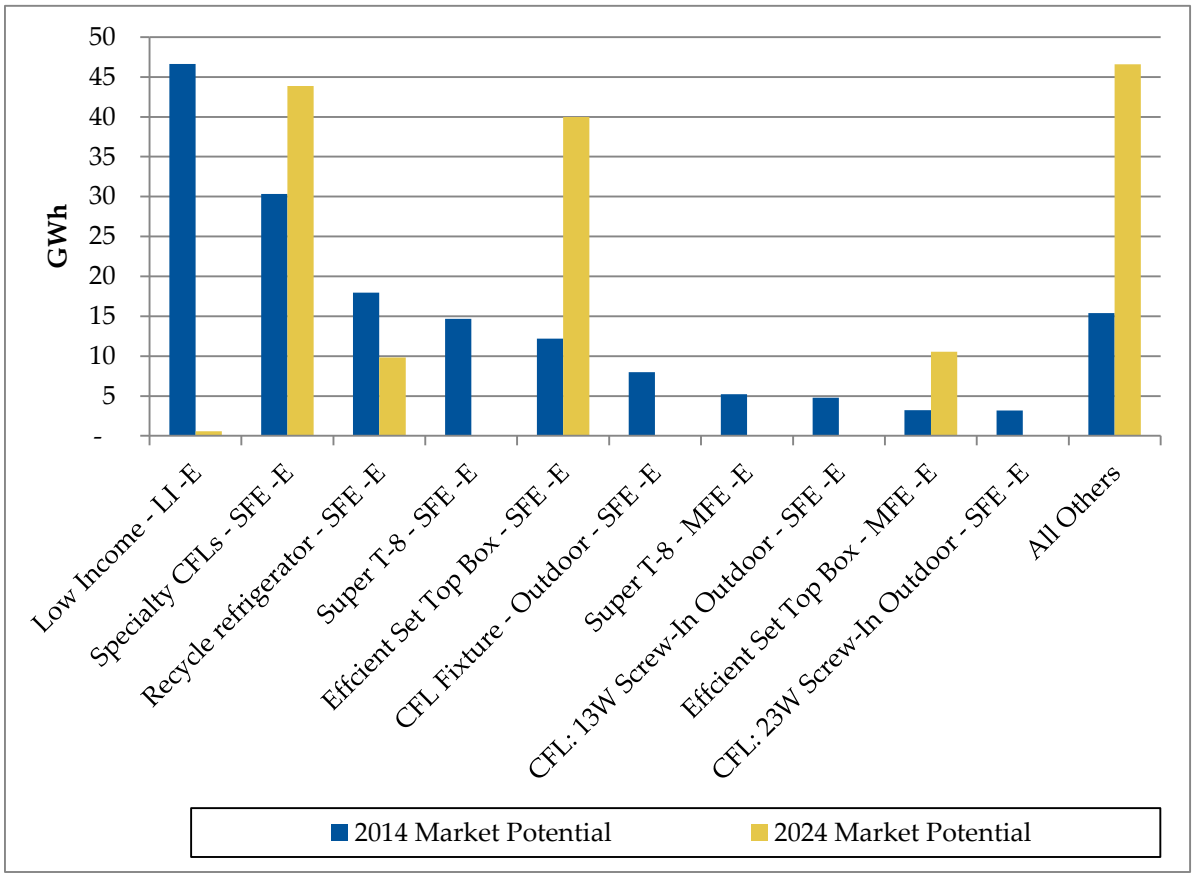
Figure 4. PG&E Residential Gross Incremental Market Demand Potential for 2010 through 2024 (MW)



1.1.3 Highest Energy Savings Measures

The highest energy savings measure in existing residential buildings in PG&E service territory is Low Income in the early years followed by Efficient Set Top Boxes and Specialty CFLs Figure 5 presents a list of the top ten measures in PG&E service territory. These top ten measures contribute approximately 90% of total market potential in existing residential buildings in 2014 and 69% in 2024.

Figure 5 PG&E Residential Market Potential Top Ten Measures (MWh)

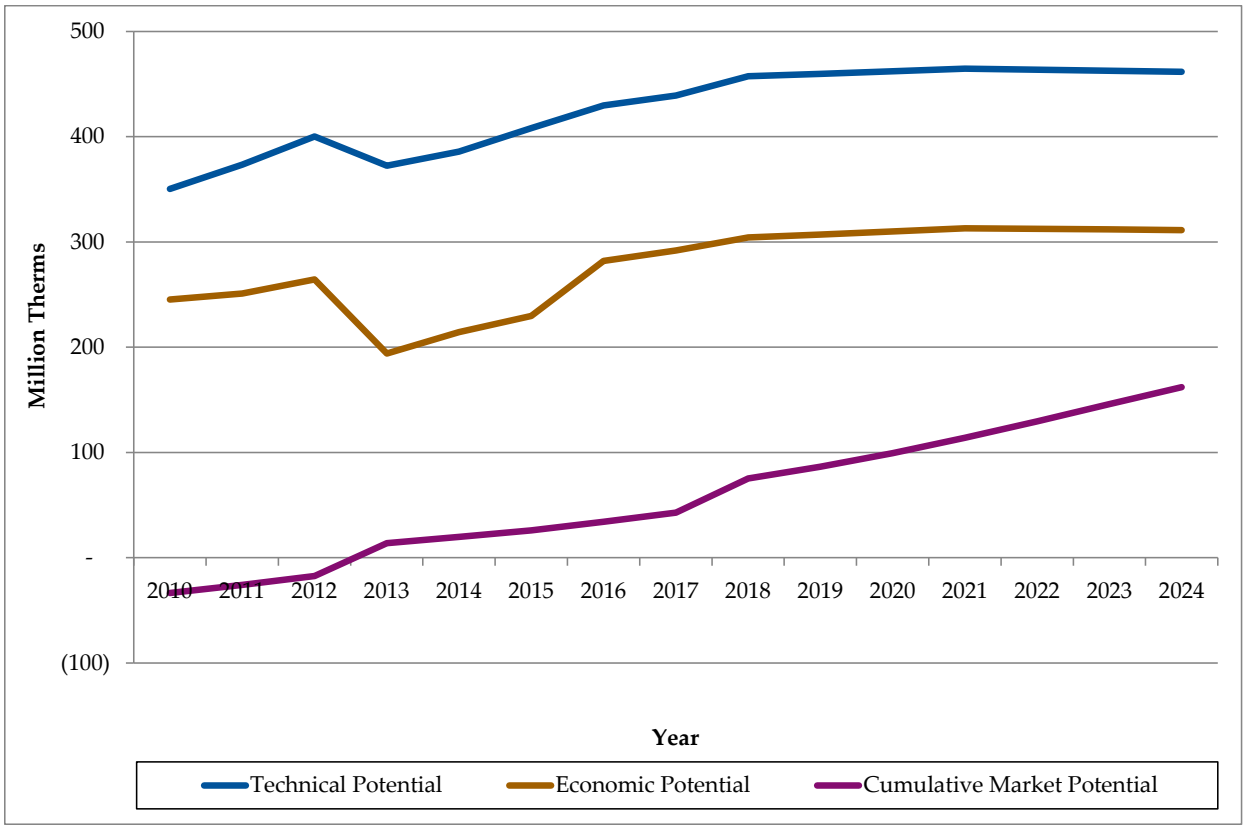


The CFL measures included (besides Specialty CFLs) have savings in 2014 but not in 2024. This is because codes and standards raises baseline for those measures to efficient level in 2018. Hence they have no energy savings beyond 2018.

1.2 Gas Efficiency Potential in Existing PG&E Residential Buildings

Technical, Economic and Cumulative Market Savings PotentialFigure 6 presents technical, economic and cumulative market gas energy savings potential in existing buildings in PG&E service territory. The technical potential is 350 million therms in 2010 and 450 million therms in 2024; the economic potential is 250 million therms in 2010 and 310 million therms in 2024. Cumulative Market Potential begins in the negative, due to the interactive heating effects of some other measures included in the portfolio.

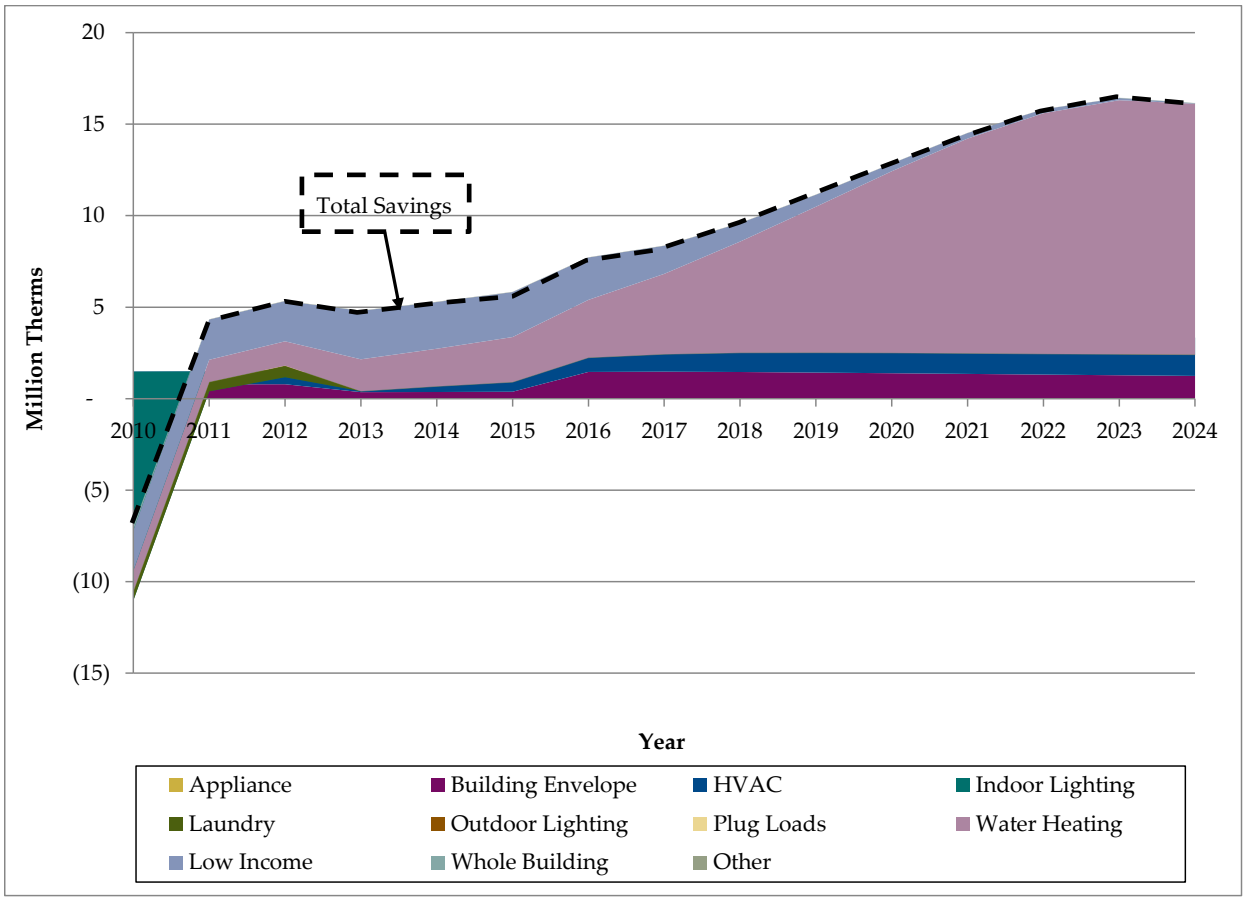
Figure 6. PG&E Residential Technical, Economic, and Cumulative Market Gas Energy Savings Potential for 2010 through 2024 (Million Therms)



1.2.1 Gross Incremental Market Savings Potential

Figure 7 presents the gross incremental market potential for gas energy savings. The gas energy savings potential is calculated to be -6 million therms in 2010 and 17 million therms in 2024. The initial negative calculation is due to interactive heating effects with other measures in the portfolio. There is gradual increase in gross incremental market potential starting in 2016; this is due to ultra-high efficiency water heat and boiler measures becoming cost effective and entering the utility portfolio.

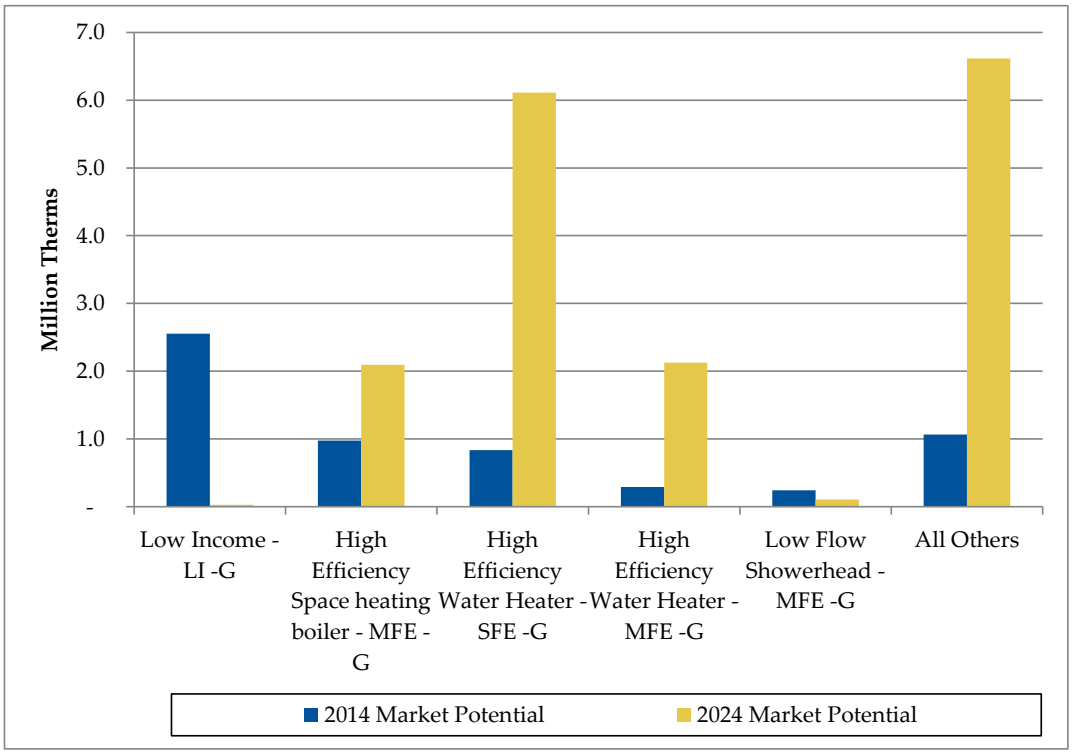
Figure 7. PG&E Residential Gross Incremental Market Gas Energy Savings Potential for 2010 through 2024 (Million Therms)



1.2.2 Highest Energy Savings Measure

Figure 8 presents the top gas energy savings measures in PG&E residential service territory.

Figure 8. PG&E Residential Market Potential Top Five Measures (Million Therms)



2 Energy Efficiency Potential in Existing SCE Residential Buildings

2.1 Electric Efficiency Potential in Existing SCE Residential Buildings

2.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 9 presents the technical, economic and cumulative market energy savings potential for existing residential buildings in SCE service territory. Technical energy savings potential varies from approximately 4,200 GWh (in 2010) to 3,800 GWh (in 2024). The economic potential varies from approximately 3,500 GWh (in 2010) to approximately 3,200 GWh (in 2024). Residential technical and economic potential decrease sharply in 2013 and in 2018, this is due to a change in codes and standards for residential lighting. Cumulative market potential begins a little under 3,000 GWh (in 2010) to approximately 2,500 GWh (in 2024).

Figure 9. SCE Residential Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

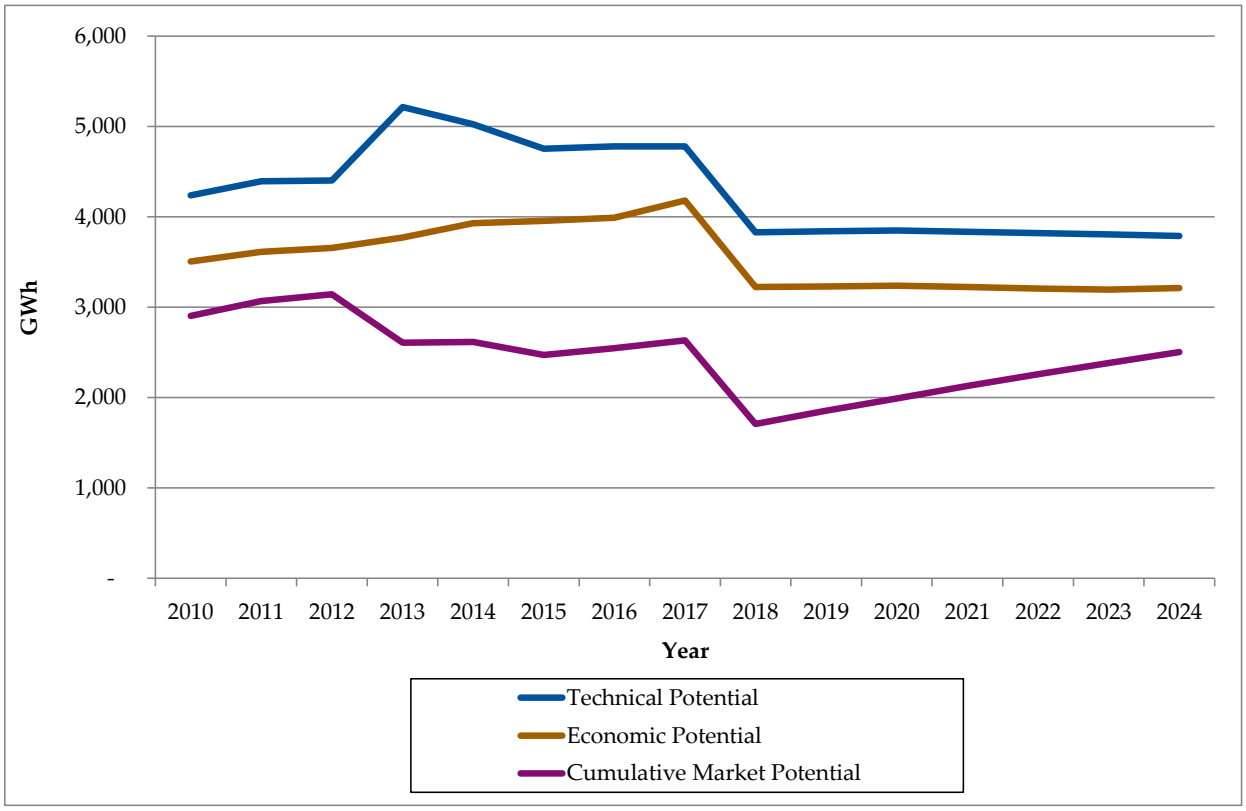
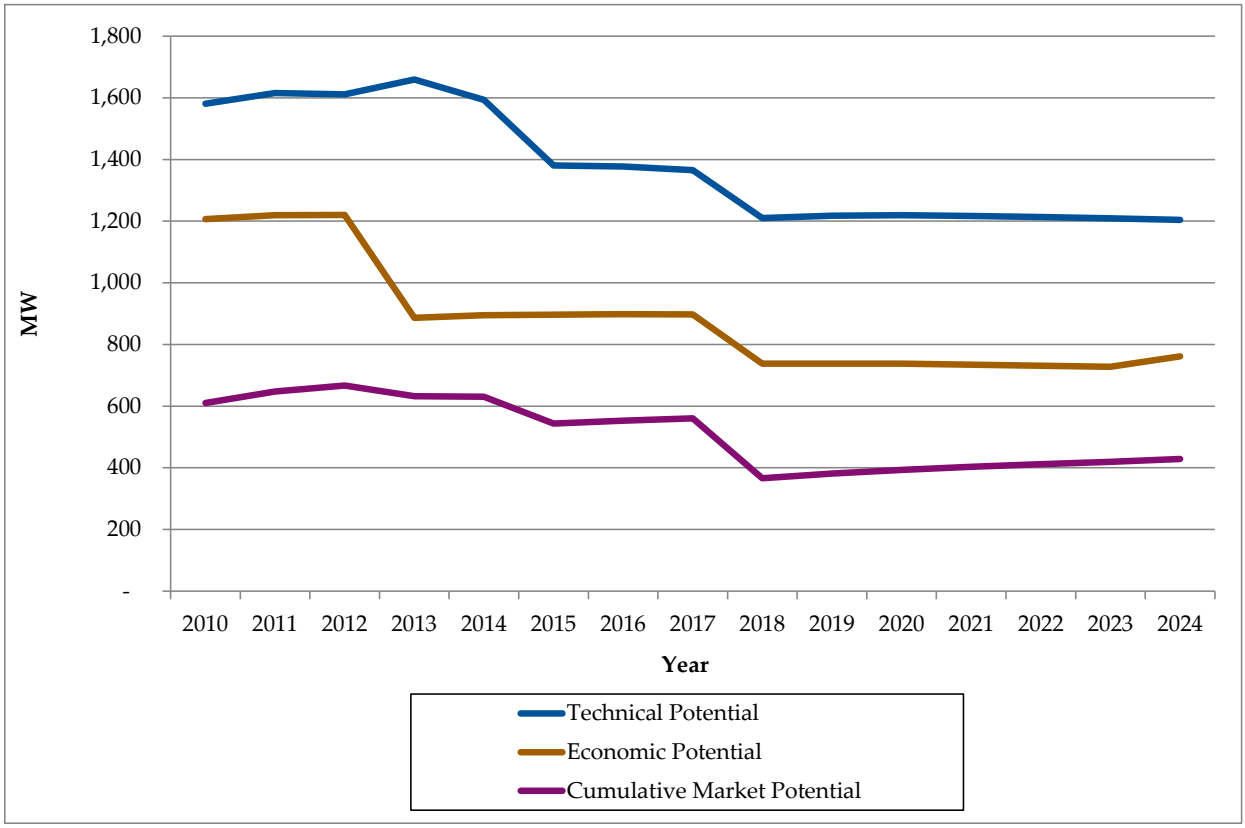


Figure 10 presents the gross technical, economic and cumulative market demand savings potential in SCE service territory from 2010 through 2024. Technical demand savings potential varies from approximately 1,600 MW (in 2010) to 1,200 MW (in 2024). The economic potential varies from approximately 1,200 MW (in 2010) to just under 800 MW (in 2024). Cumulative market potential begins just over 600 MW (in 2010) to just over 400 MW (in 2024).

Figure 10. SCE Residential Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



2.1.2 Gross Incremental Market Potential

The gross incremental market potential for existing residential buildings in SCE service territory is presented in Figure 11. The gross incremental market potential is calculated to be approximately 700 GWh in 2010 and approximately 175 GWh in 2024. The gross incremental market potential shows a sharp decline coming up to year 2013 as codes and standards come into play.

Figure 11. SCE Residential Gross Incremental Market Potential for 2010 through 2024 (GWh)

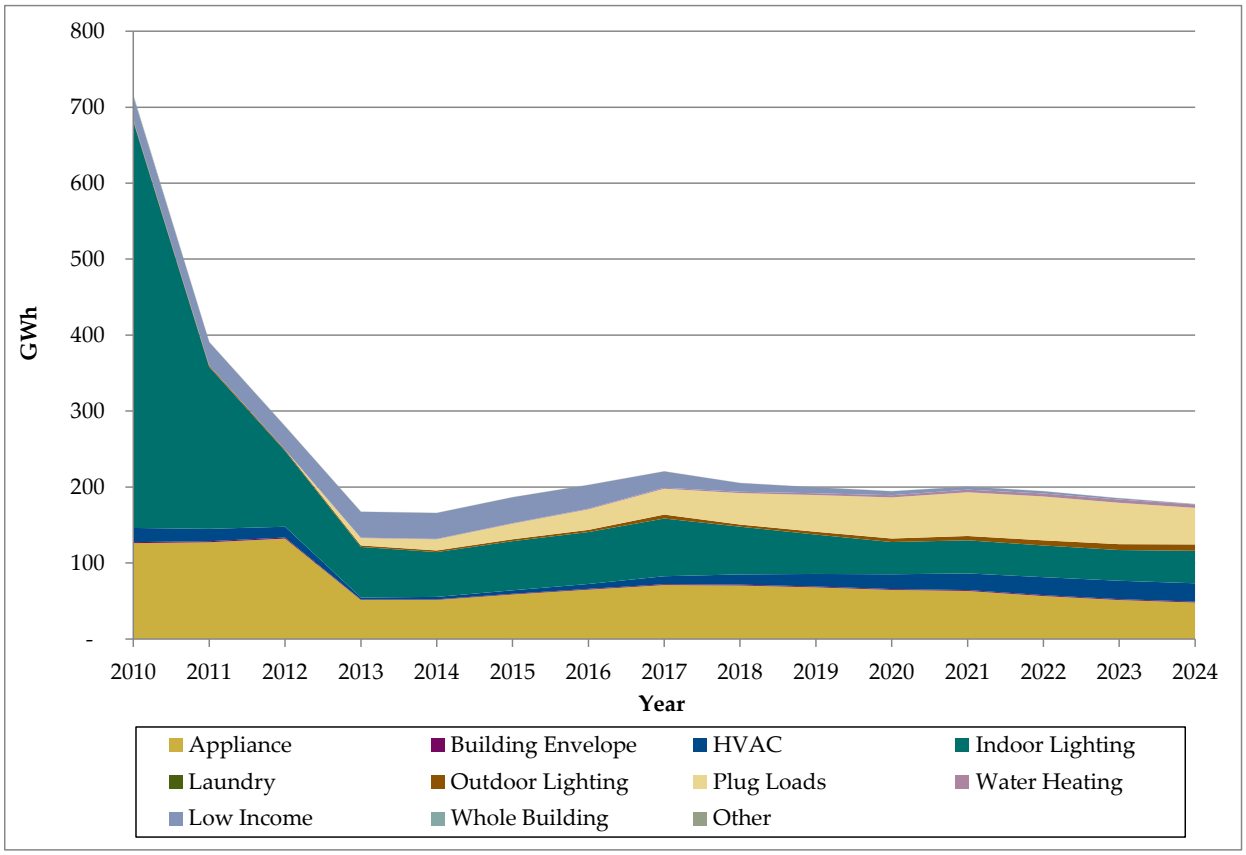
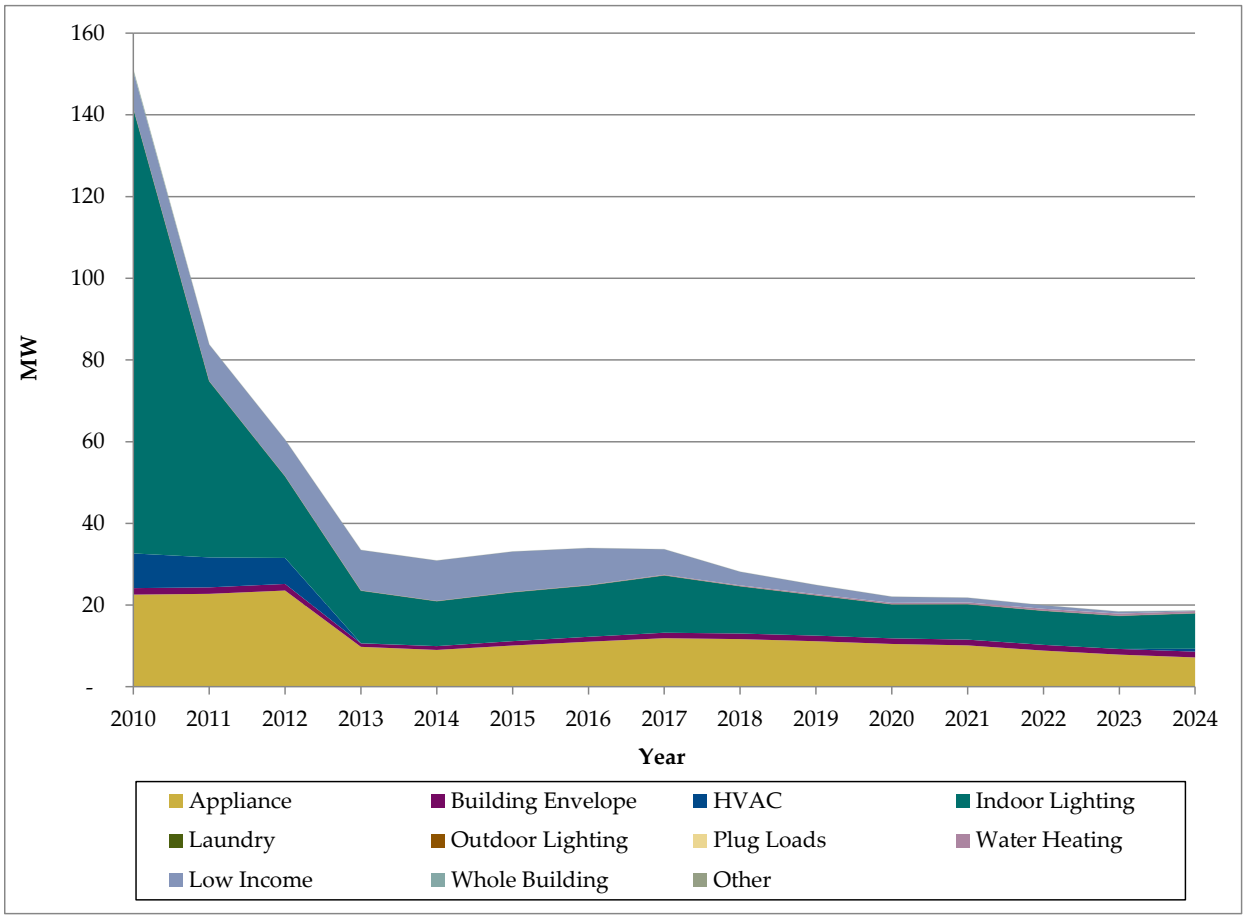


Figure 12 presents the gross incremental demand savings potential for existing buildings in SCE service territory. This graph follows a trend very similar to the gross incremental energy savings potential curve. It varies from 150 MW in 2010, to approx. 20 MW in 2024.

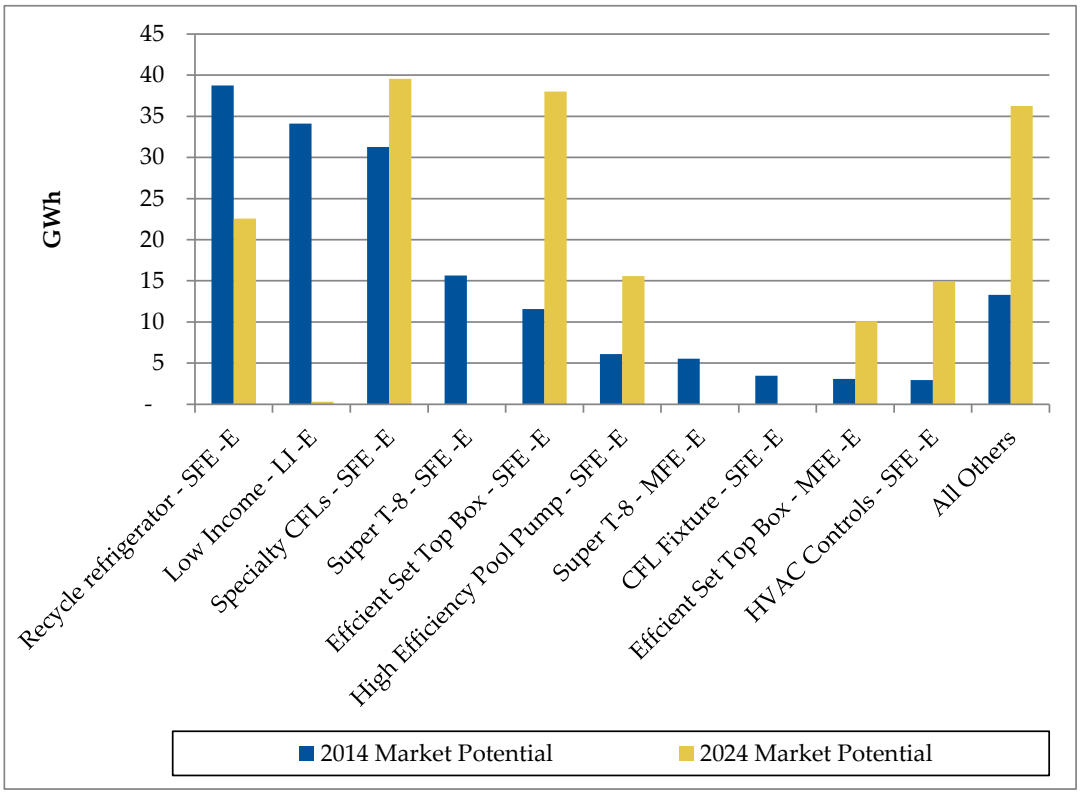
Figure 12. SCE Residential Gross Incremental Market Demand Potential for 2010 through 2024 (MW)



2.1.3 Highest Energy Savings Measures

The highest energy savings measure in existing residential buildings in SCE service territory are Recycle Refrigerators, Efficient Set Top Boxes and Specialty CFLs. Figure 13 presents a list of the top ten measures in SCE service territory. These top ten measures contribute approximately 92% of total market potential in existing residential buildings in 2014 and 80% of market potential in 2024.

Figure 13. SCE Residential Market Potential Top Ten Measures (MWh)



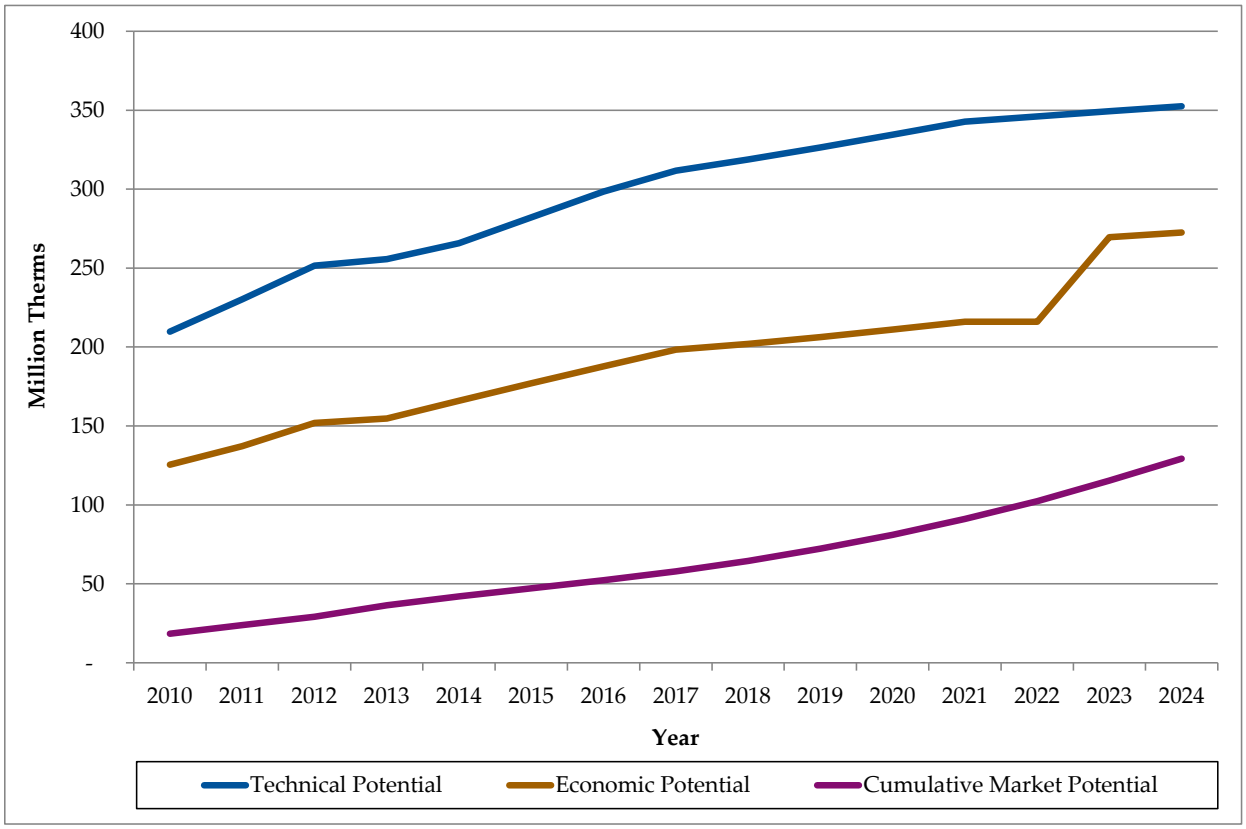
3 Energy Efficiency Potential in Existing SCG Residential Buildings

3.1 Gas Efficiency Potential in Existing SCG Residential Buildings

3.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 14 presents the technical, economic and cumulative market gas energy savings potential in existing buildings in SCG service territory. The technical potential is 210 million therms in 2010 and 350 million therms in 2024; the economic potential is 125 million therms in 2010 and 275 million therms in 2024. Cumulative Market Potential steadily rises from 20 million terms in 2010 to around 125 million therms in 2024

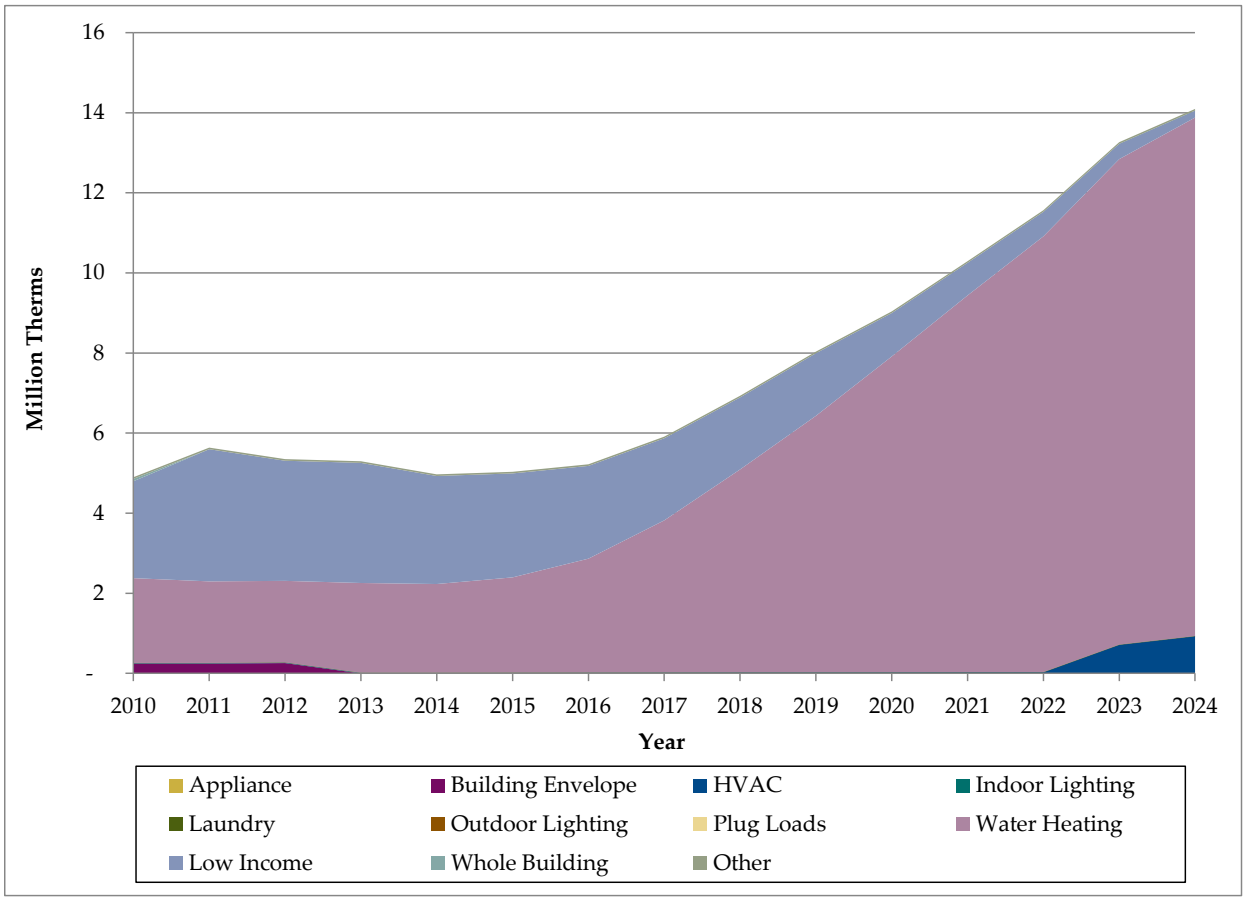
Figure 14. SCG Residential Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



3.1.2 Gross Incremental Market Savings Potential

Figure 15 presents the gross incremental market potential for gas energy savings. The gas energy savings potential is calculated to be 5 million therms in 2010 and 14 million therms in 2024. The increase in potential in later years is due to ultra-high efficiency water heat and boiler measures becoming cost effective and entering the utility portfolio.

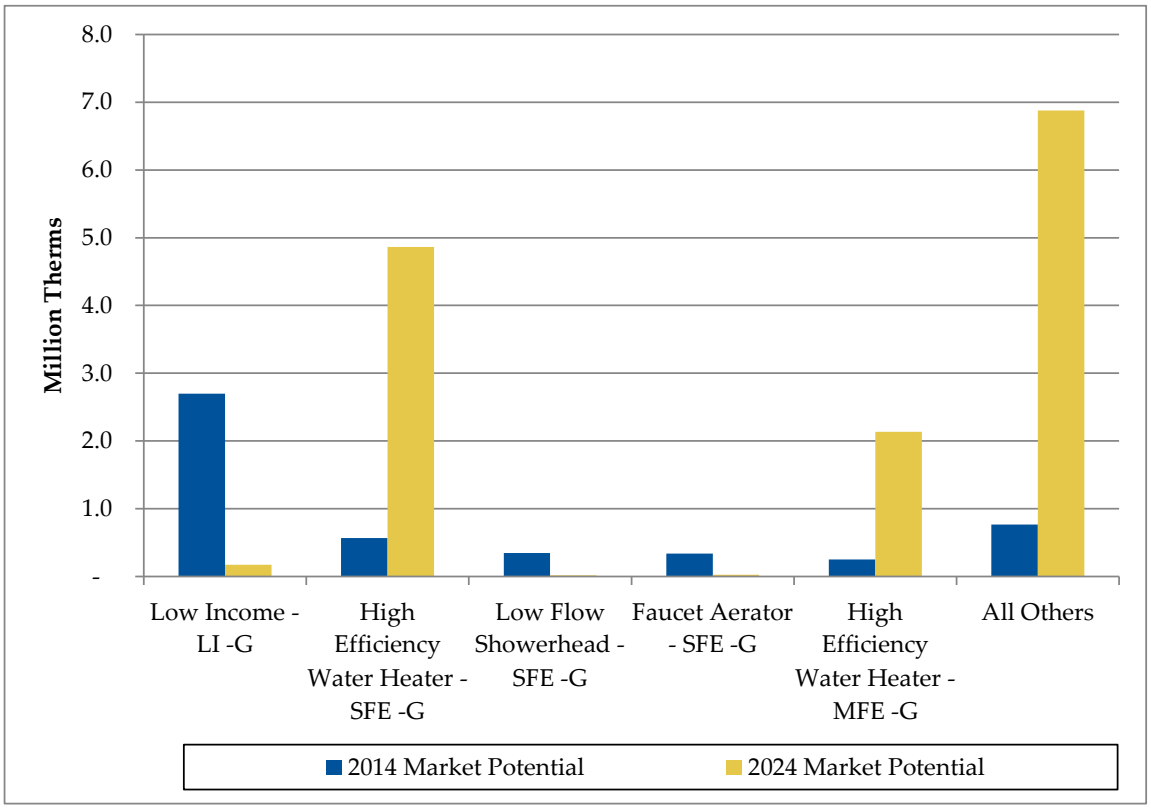
Figure 15. SCG Residential Gross Incremental Gas Potential for 2010 through 2024 (Million Therms)



3.1.3 Highest Energy Savings Measure

High efficiency water heaters, followed by low income measures are the two measures with the highest economic potential energy savings. Figure 16 presents the top gas energy savings measures in SCG residential service territory.

Figure 16. SCG Residential Market Potential Top Ten Measures (Therms)



4 Energy Efficiency Potential in Existing SDG&E Residential Buildings

4.1 Electric Efficiency Potential in Existing SDG&E Residential Buildings

4.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 17 presents the technical and economic energy savings potential for existing residential buildings in SDG&E service territory. Technical energy savings potential varies from approximately 1,050 GWh (in 2010) to 900 GWh (in 2024). The economic potential varies from approximately 900 GWh (in 2010) to just under 800 (in 2024). Cumulative Market potential begins around 500 GWh in 2010 and ends around 575 GWh in (2024). There are decreases in all the curves in 2013 and 2018 due to a change in codes and standards for residential lighting.

Figure 17. SDG&E Residential Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

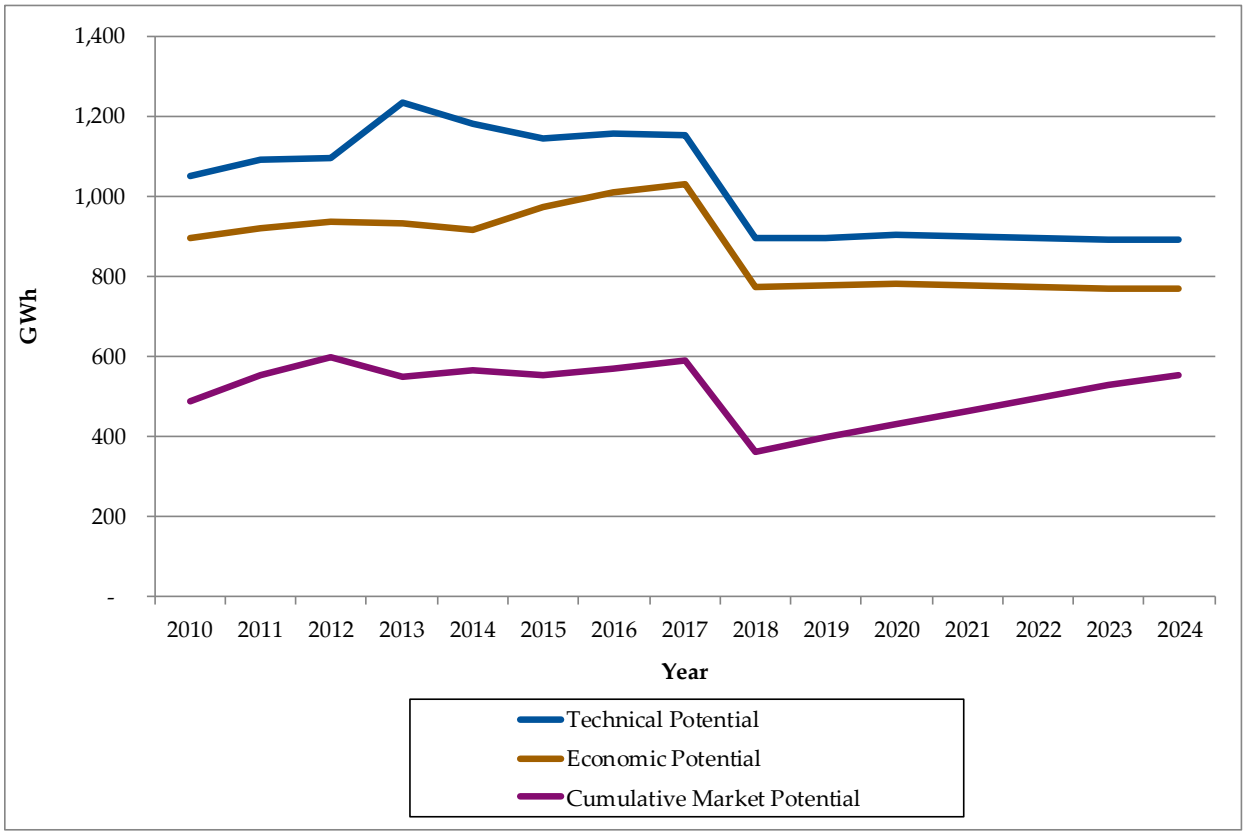
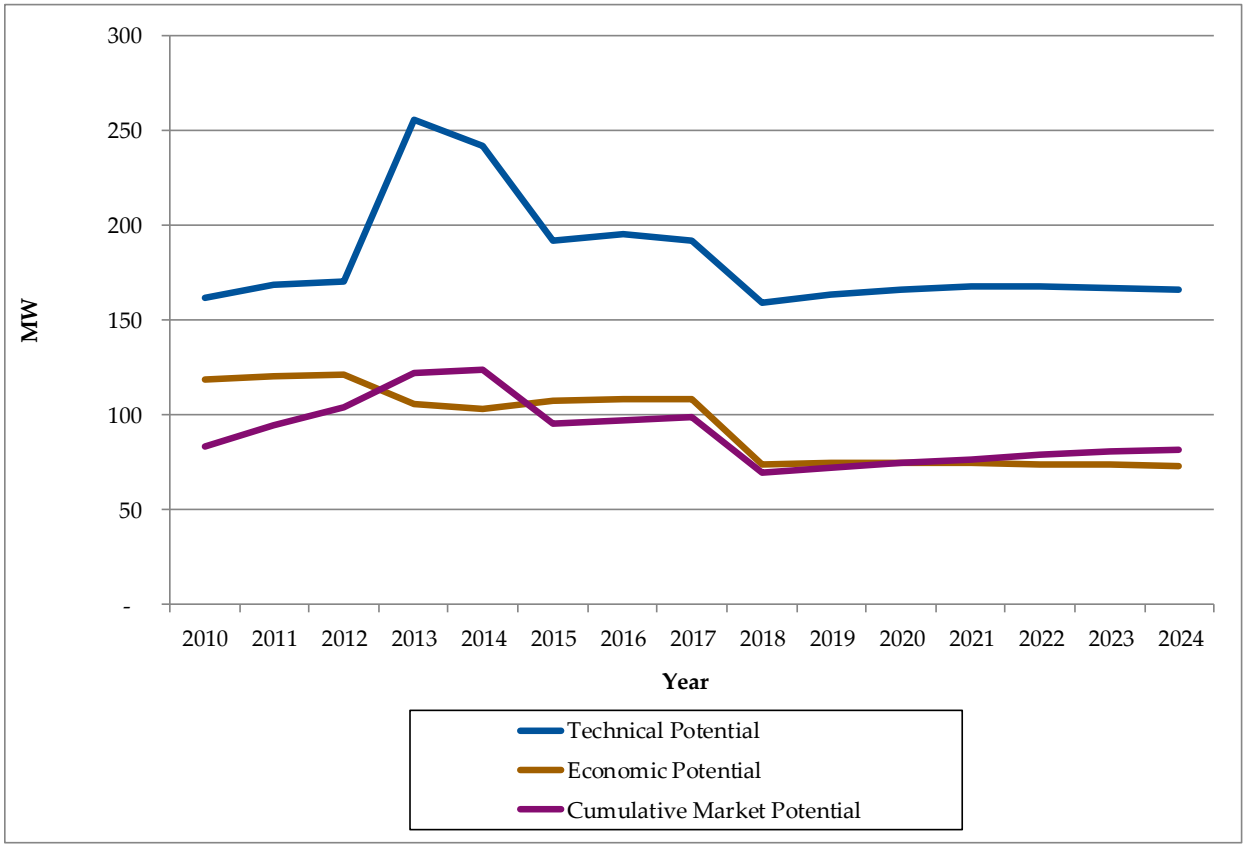


Figure 18 presents the gross technical, economic and cumulative market demand savings potential in SDG&E service territory from 2010 through 2024. Technical potential has a spike in 2013 due to the introduction of HVAC emerging technologies, which have high demand savings. This spike is not reflected by the economic or cumulative market potential curves because these technologies are not initially cost effective and are therefore not included in the portfolio. Cumulative market potential is higher than economic potential at some points in the forecast due to high historic energy efficiency

achievements. Some measures that do not pass the TRC test in our model were included in past portfolios thus increasing cumulative savings beyond the economic potential that our model predicts.

Figure 18. SDG&E Residential Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



4.1.2 Gross Incremental Market Potential

The gross incremental market potential for existing residential buildings in SDG&E service territory is presented in Figure 19. The gross incremental market potential is calculated to be approximately 130 GWh in 2010 and approximately 40 GWh in 2024. The gross incremental market potential shows a sharp decline in 2013 (similar to the decline in technical and economic potential) due to change in residential codes and standards.

Figure 19. SDG&E Residential Gross Incremental Market Potential for 2010 through 2024 (GWh)

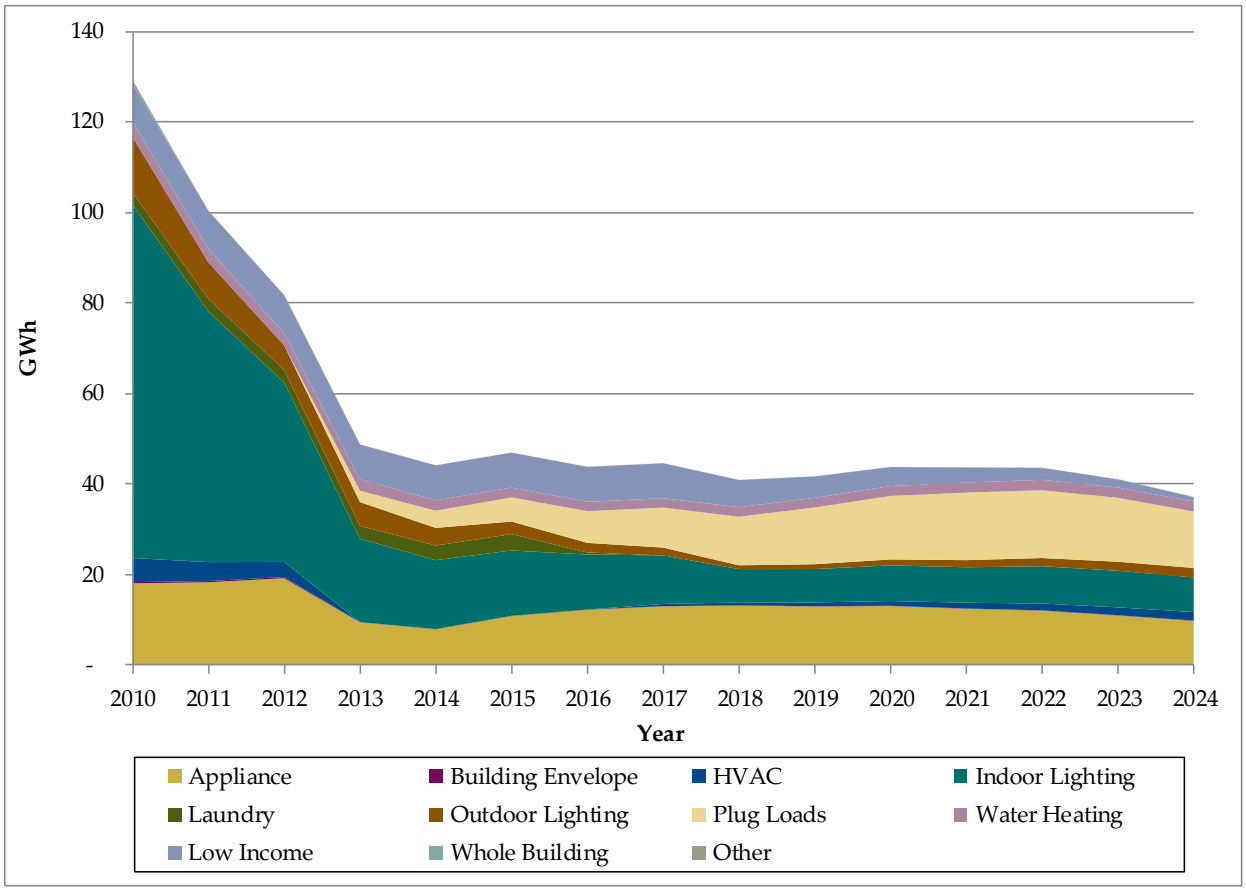
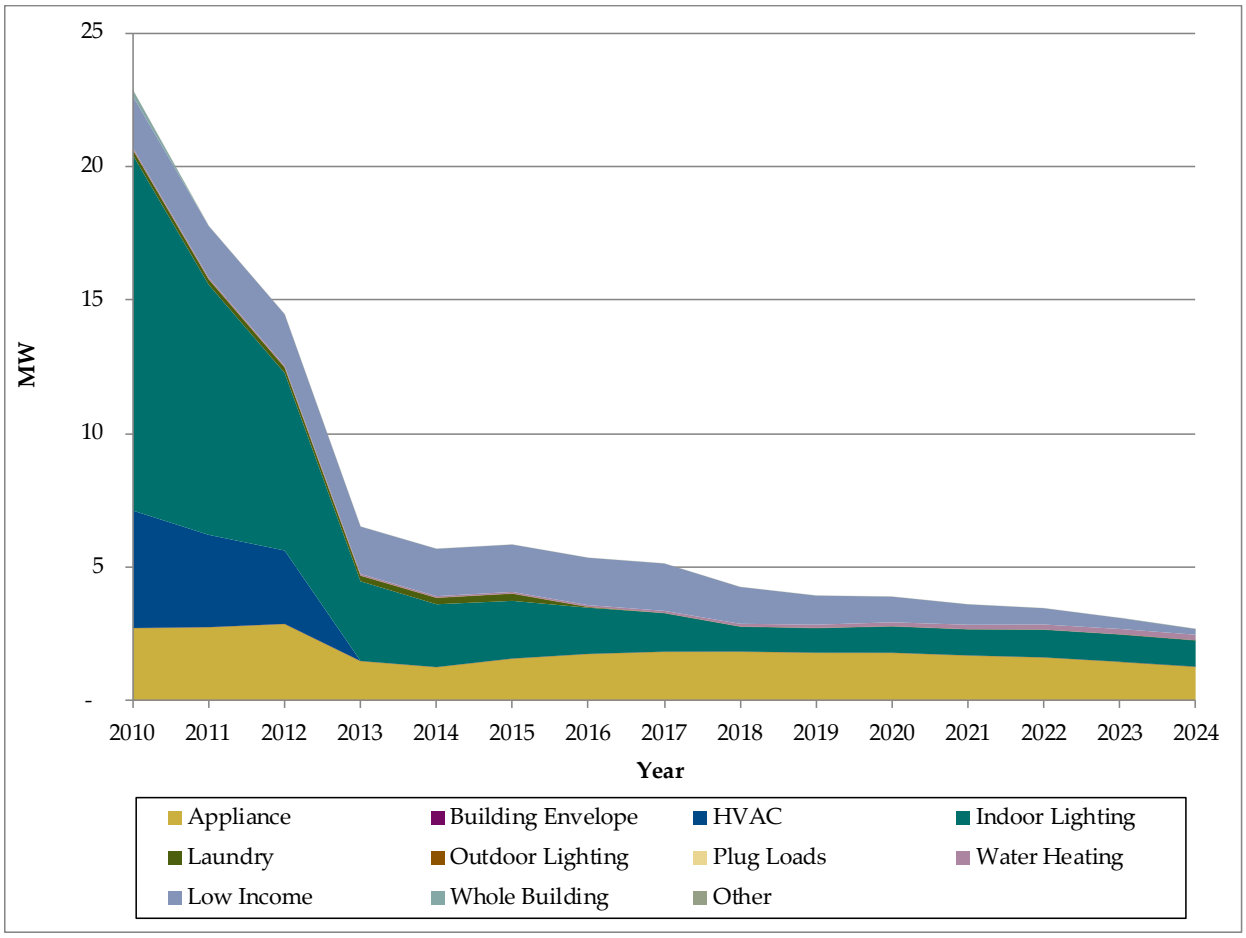


Figure 20 presents the gross incremental demand savings potential for existing buildings in SDG&E service territory. This graph follows a trend very similar to the gross incremental energy savings potential curve. It varies from 23 MW in 2010, to approximately 3 MW in 2024.

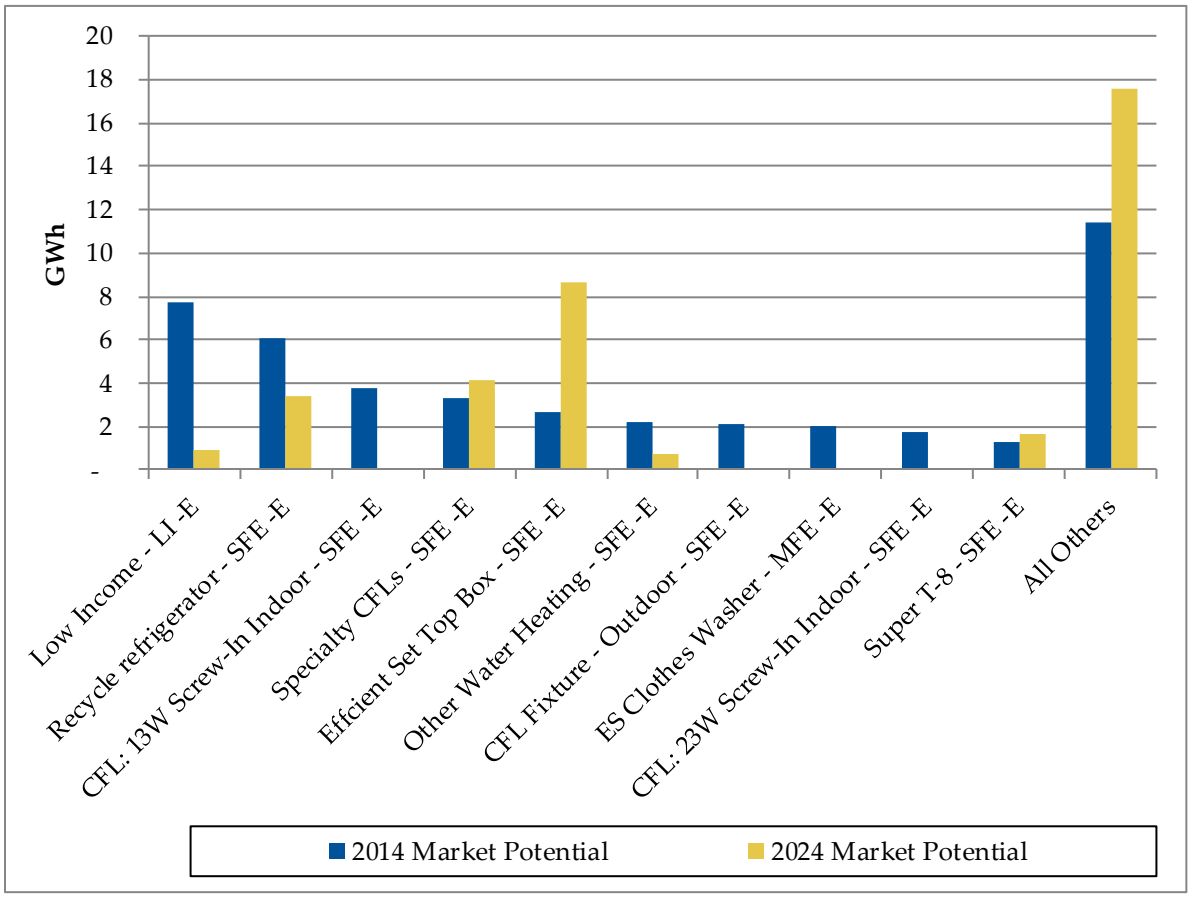
Figure 20. SDG&E Residential Gross Incremental Market Demand Potential for 2010 through 2024 (MW)



4.1.3 Highest Energy Savings Measures

Figure 21 presents a list of the top ten measures in SDG&E service territory. These top ten measures contribute approximately 74% of total market potential in existing residential buildings in 2014 and 59% of market potential in 2024.

Figure 21. SDG&E Residential Market Potential Top Ten Measures (MWh)

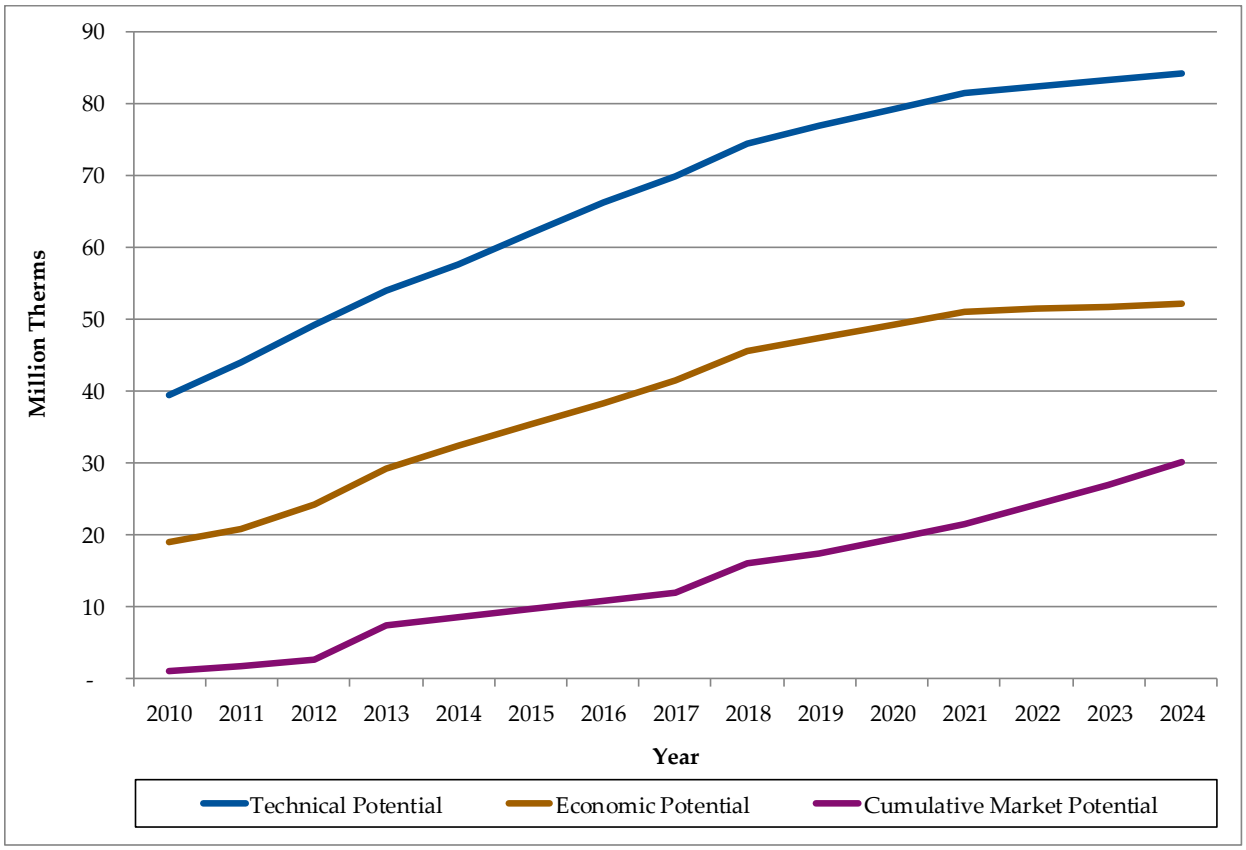


4.2 Gas Efficiency Potential in Existing SDG&E Residential Buildings

4.2.1 Technical, Economic and Cumulative Market Savings Potential

Figure 22 presents the technical, economic and cumulative market gas energy savings potential in existing buildings in SDG&E service territory. The technical potential is 40 million therms in 2010 and 85 million therms in 2024; the economic potential is 20 million therms in 2010 and 50 million therms in 2024. The cumulative market potential begins 1 million therms in 2010 and finishes at around 30 million therms in 2024

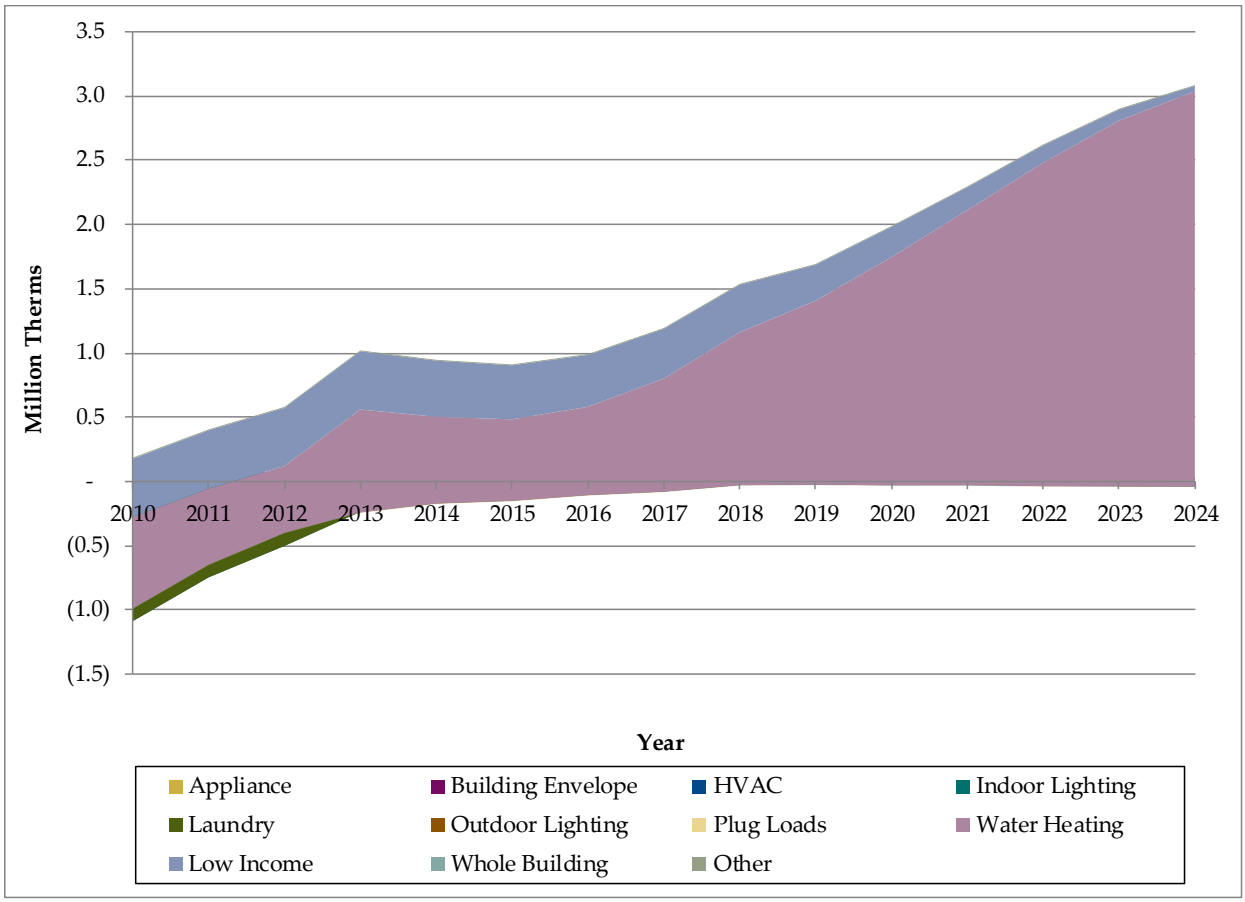
Figure 22. SDG&E Residential Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



4.2.2 Gross Incremental Market Savings Potential

Figure 23 presents the gross incremental market potential for gas energy savings. The gas energy savings potential is calculated to be 0.2 million therms in 2010 and 3 million therms in 2024. The significant increase is due to ultra-high efficiency water heater and boiler measures becoming cost effective and entering the utility portfolio.

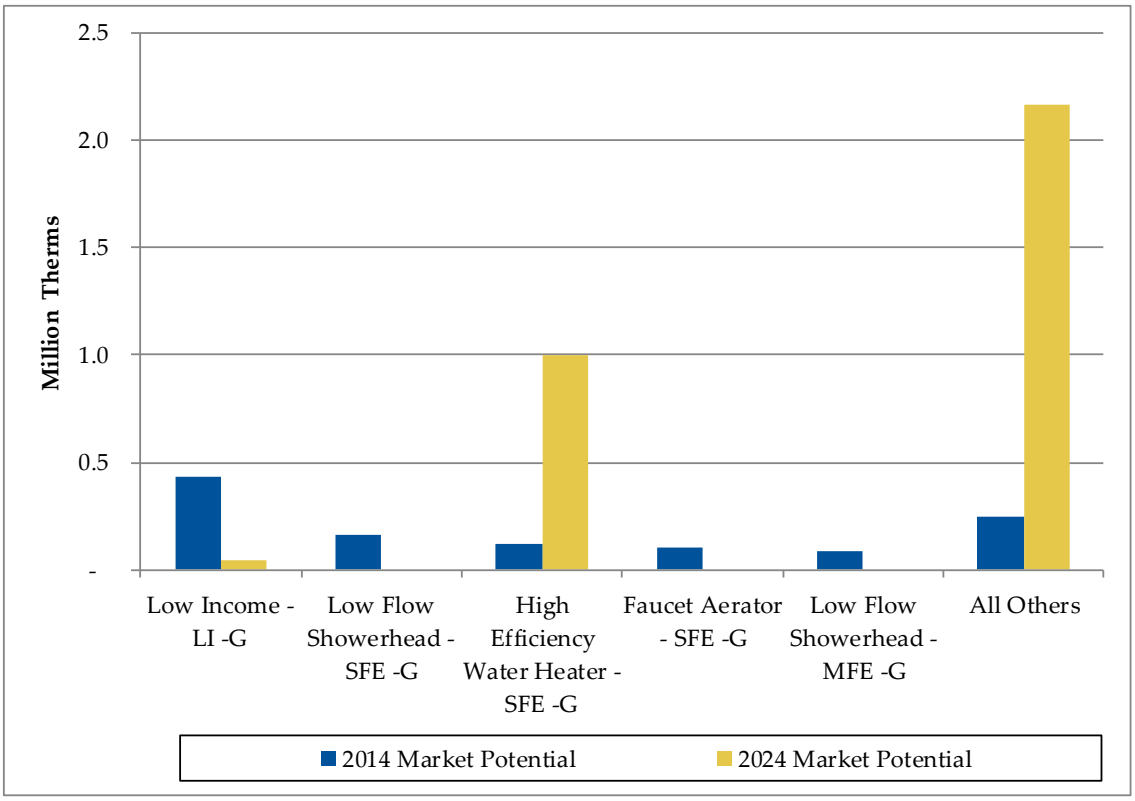
Figure 23. SDG&E Residential Gross Incremental Gas Potential for 2010 through 2024 (Million Therms)



4.2.3 Highest Energy Savings Measure

Figure 24 presents the top gas energy savings measures in SDG&E residential service territory.

Figure 24. SDG&E Residential Market Potential Top Ten Measures (Therms)



5 Energy Efficiency Potential in Existing PG&E Commercial Buildings

5.1 Electric Efficiency Potential in Existing PG&E Commercial Buildings

5.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 25 presents the technical, economic, and cumulative market energy savings potential for existing residential buildings in PG&E service territory. Technical energy savings potential varies from approximately 4,300 GWh (in 2010) to 5,500 GWh (in 2024). The economic potential varies from approximately 4,000 GWh (in 2010) to approximately 5,000 (in 2024). The cumulative market follows a different path from its 2,500 GWh in 2010 up to 5,000 GWh in 2024. The increase in 2013 shows the effect of the introduction of emerging technologies and the decline in 2018 is a result of changes in codes and standards.

Figure 25. PG&E Commercial Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

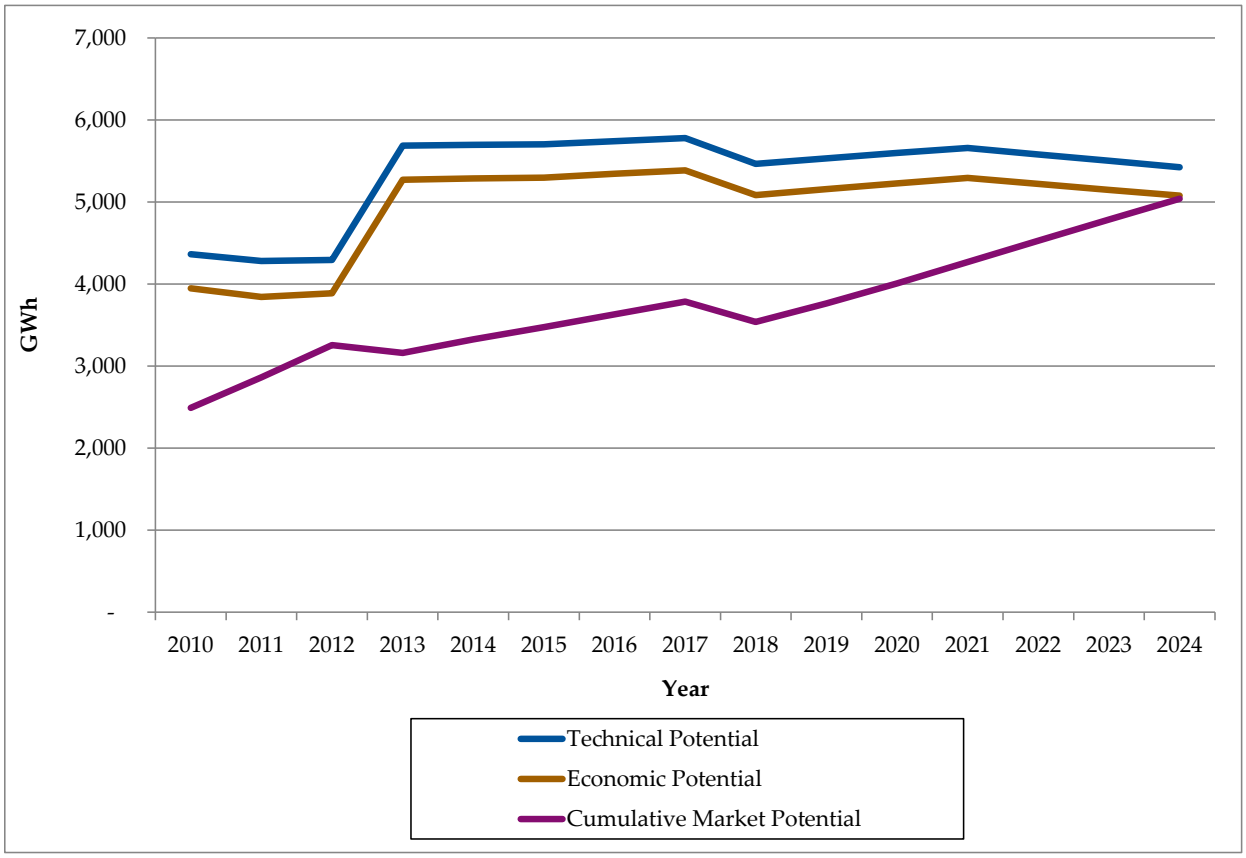
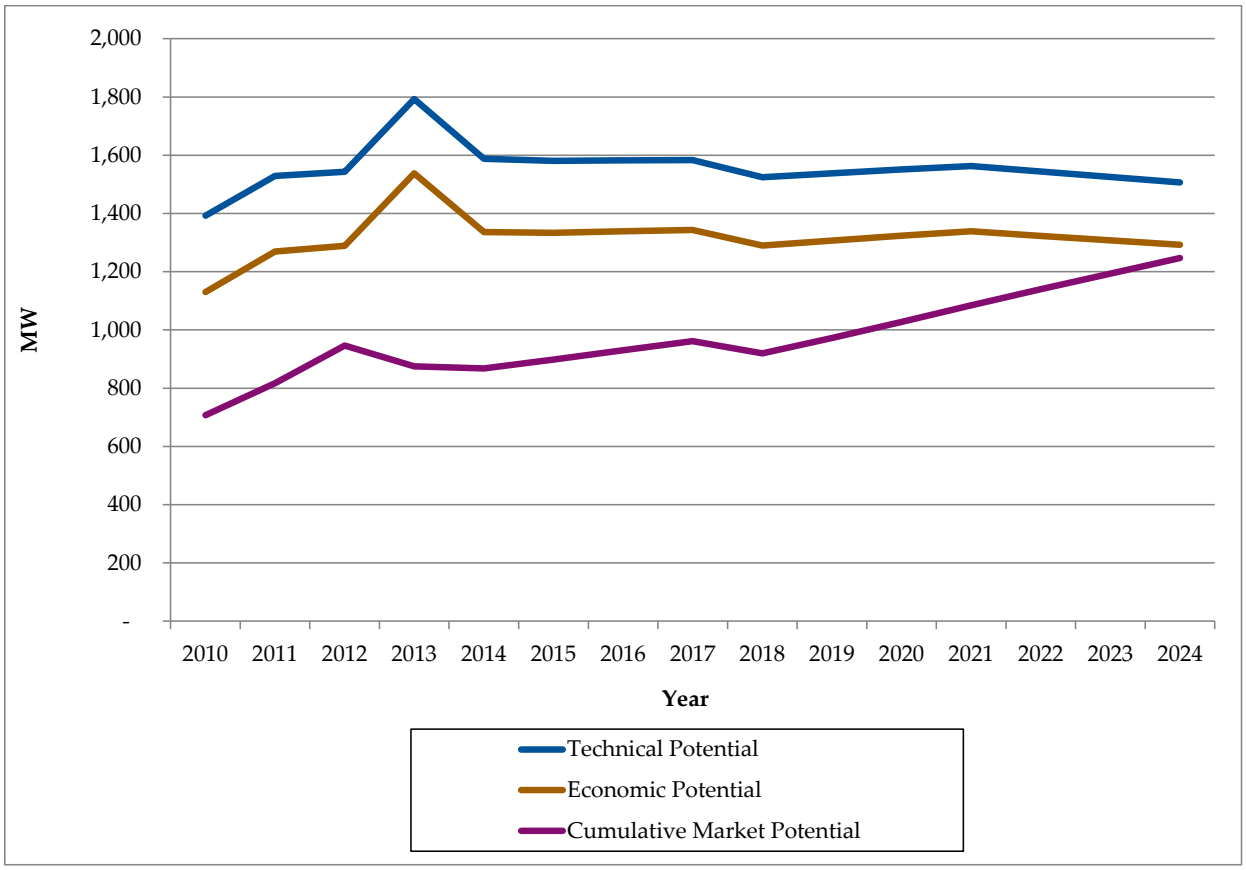


Figure 26 presents the gross technical, economic, and cumulative market demand savings potential in PG&E service territory from 2010 through 2024. All three curves follow a similar path to that of energy potential.

Figure 26. PG&E Commercial Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



5.1.2 Gross Incremental Market Potential

The gross incremental market potential for existing commercial buildings in PG&E service territory is presented in Figure 27. The gross incremental market potential is calculated to be approximately 600 GWh in 2010 and approximately 300 GWh in 2024. The fall shows how codes and standards initially effects the incremental potential, while the rise shows the impact of emerging technologies becoming more cost effective.

Figure 27. PG&E Commercial Gross Incremental Market Potential for 2010 through 2024 (GWh)

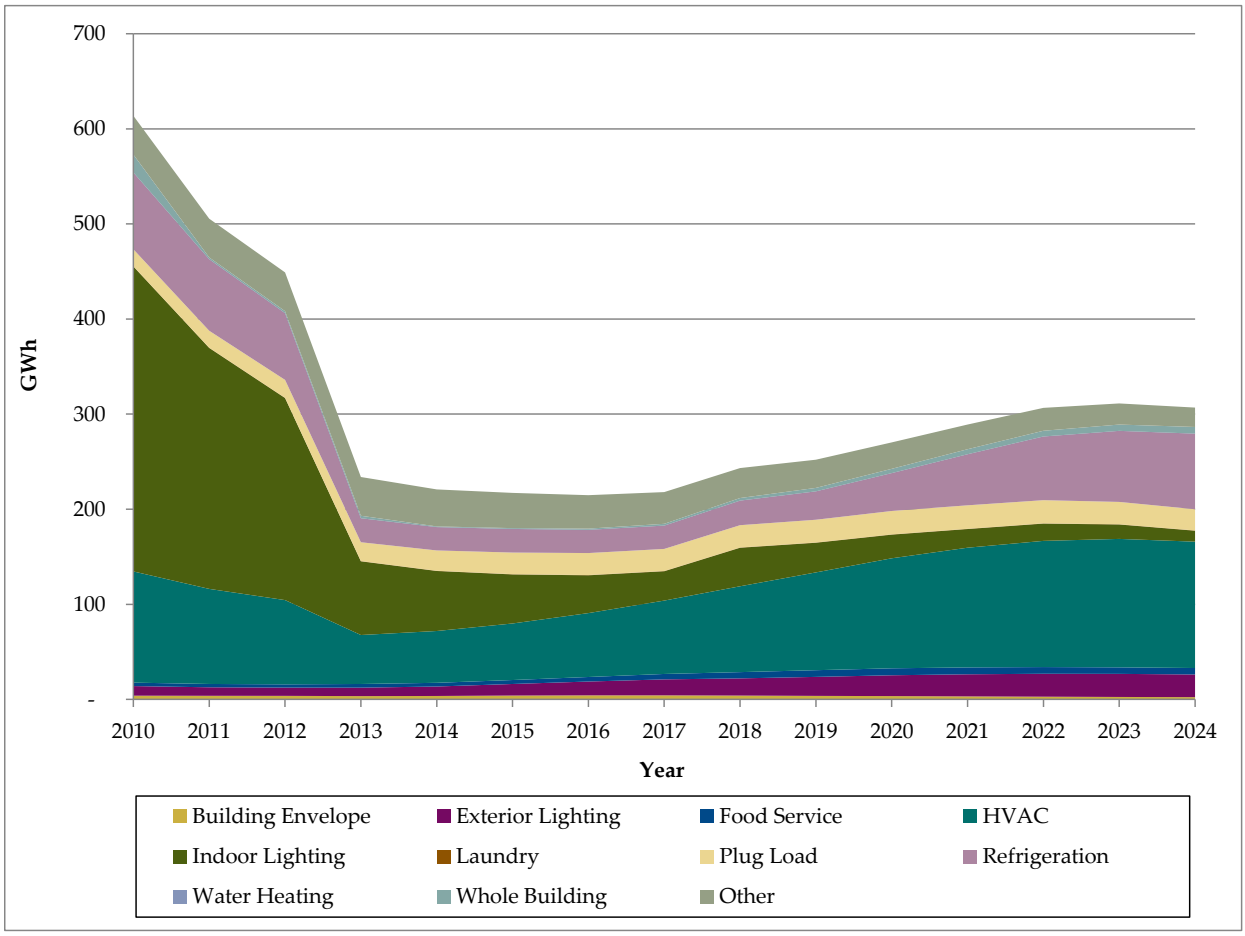
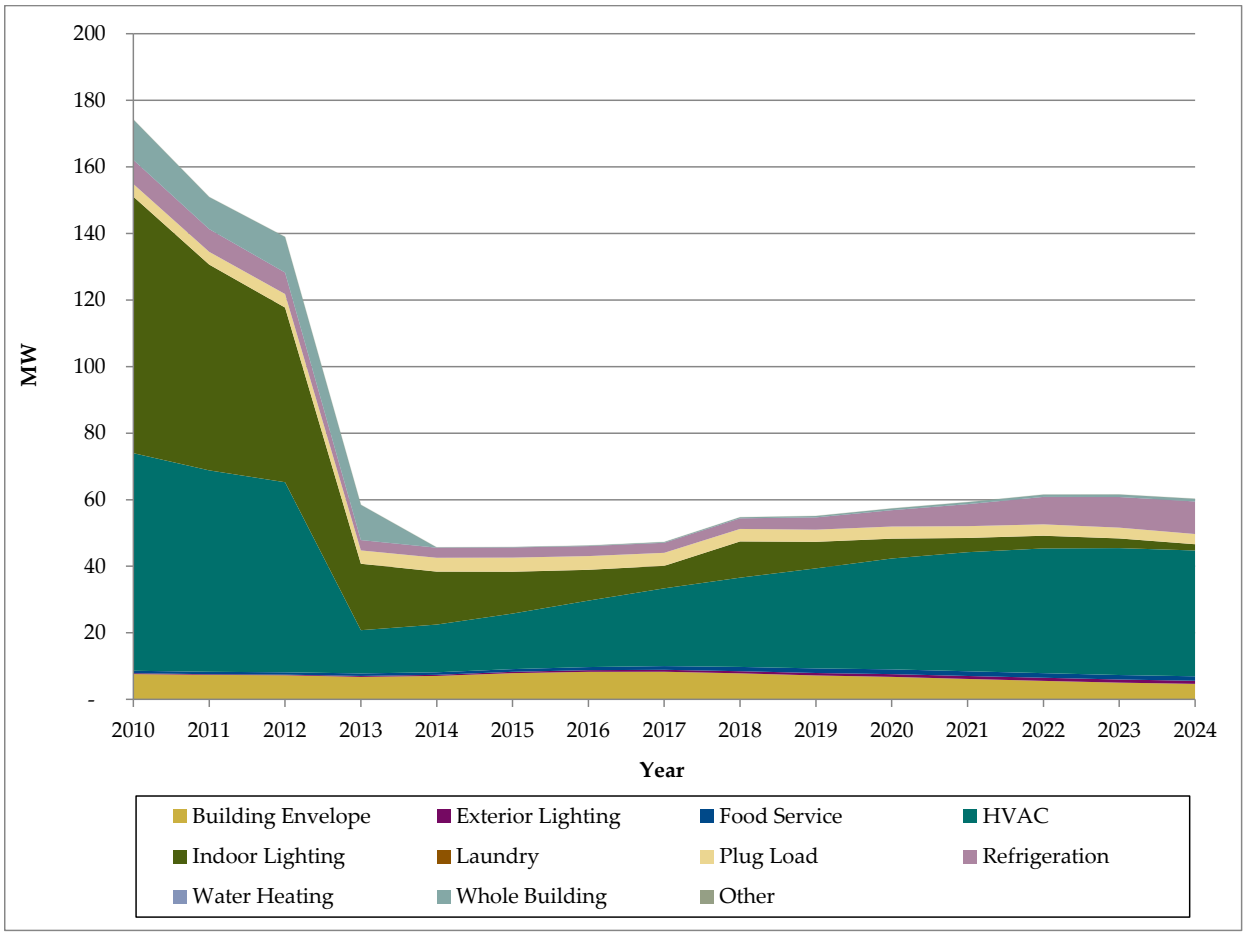


Figure 28 presents the gross incremental demand savings potential for existing buildings in PG&E service territory. This graph follows a trend very similar to the gross incremental energy savings potential curve. It varies from 175 MW in 2010, to approx. 60 MW in 2024.

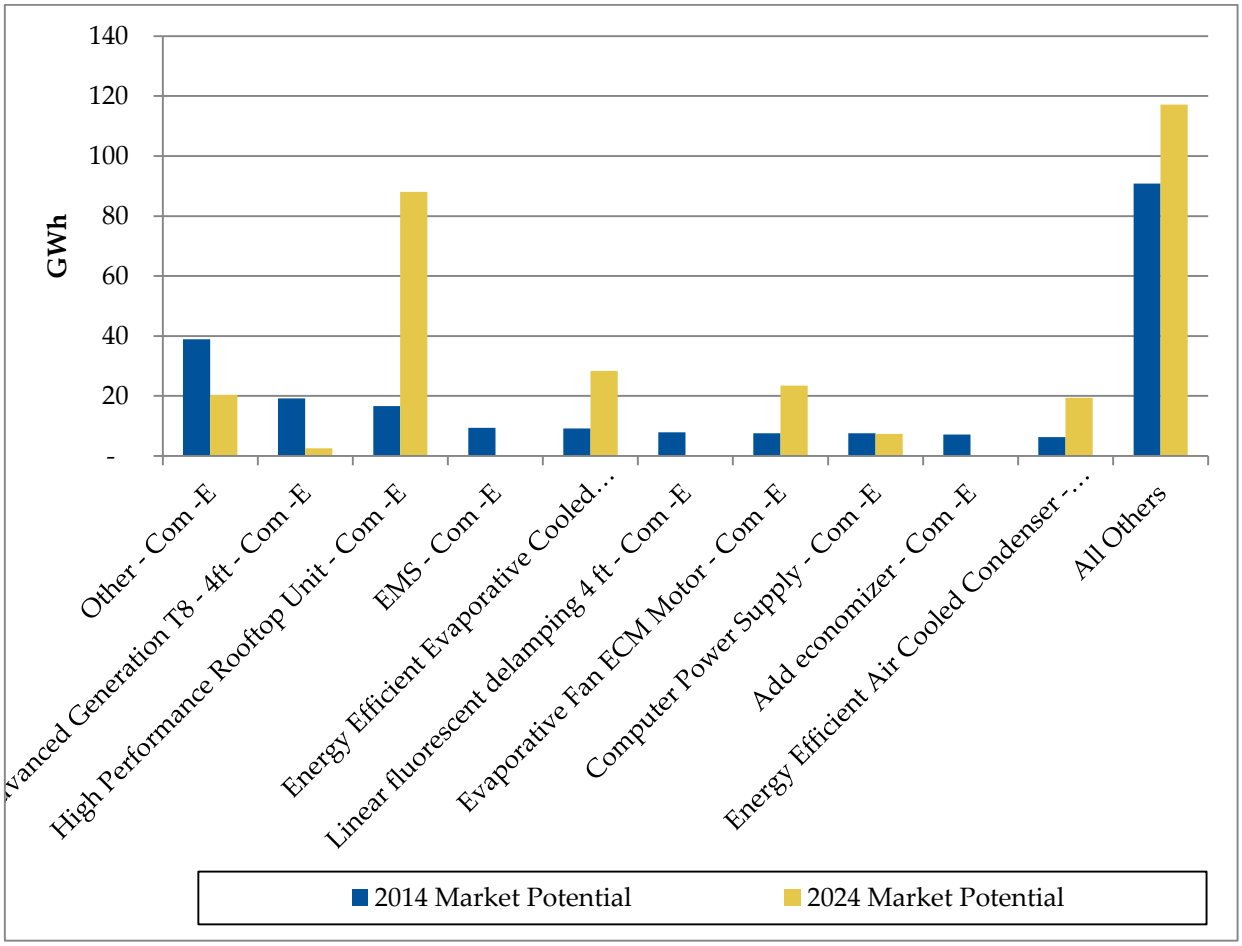
Figure 28. PG&E Commercial Gross Incremental Market Demand Potential for 2010 through 2024 (MW)



5.1.3 Highest Energy Savings Measures

Figure 29 presents a list of the top ten measures in PG&E service territory. These top ten measures contribute approximately 59% of total market potential in existing residential buildings in 2014 and 62% of market potential in 2024.

Figure 29. PG&E Commercial Market Potential Top Ten Measures (GWh)

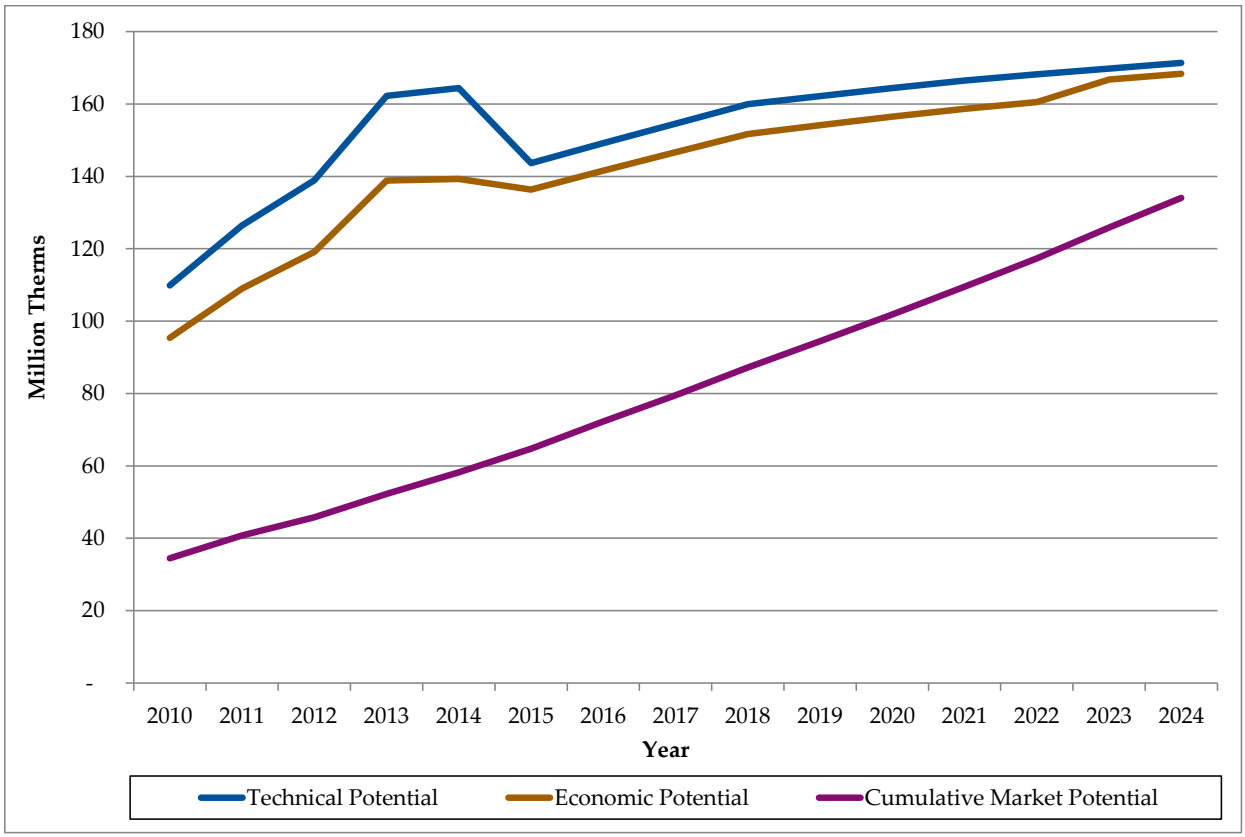


5.2 *Gas Efficiency Potential in Existing PG&E Commercial Buildings*

5.2.1 Technical, Economic and Cumulative Market Savings Potential

Figure 30 presents the technical, economic, and cumulative market gas energy savings potential in existing buildings in PG&E service territory. The technical potential is 110 million therms in 2010 and 170 million therms in 2024; the economic potential is 95 million therms in 2010 and just under 170 million therms in 2024. Cumulative market potential steadily increases from 35 million therms to 135 million therms over the forecast.

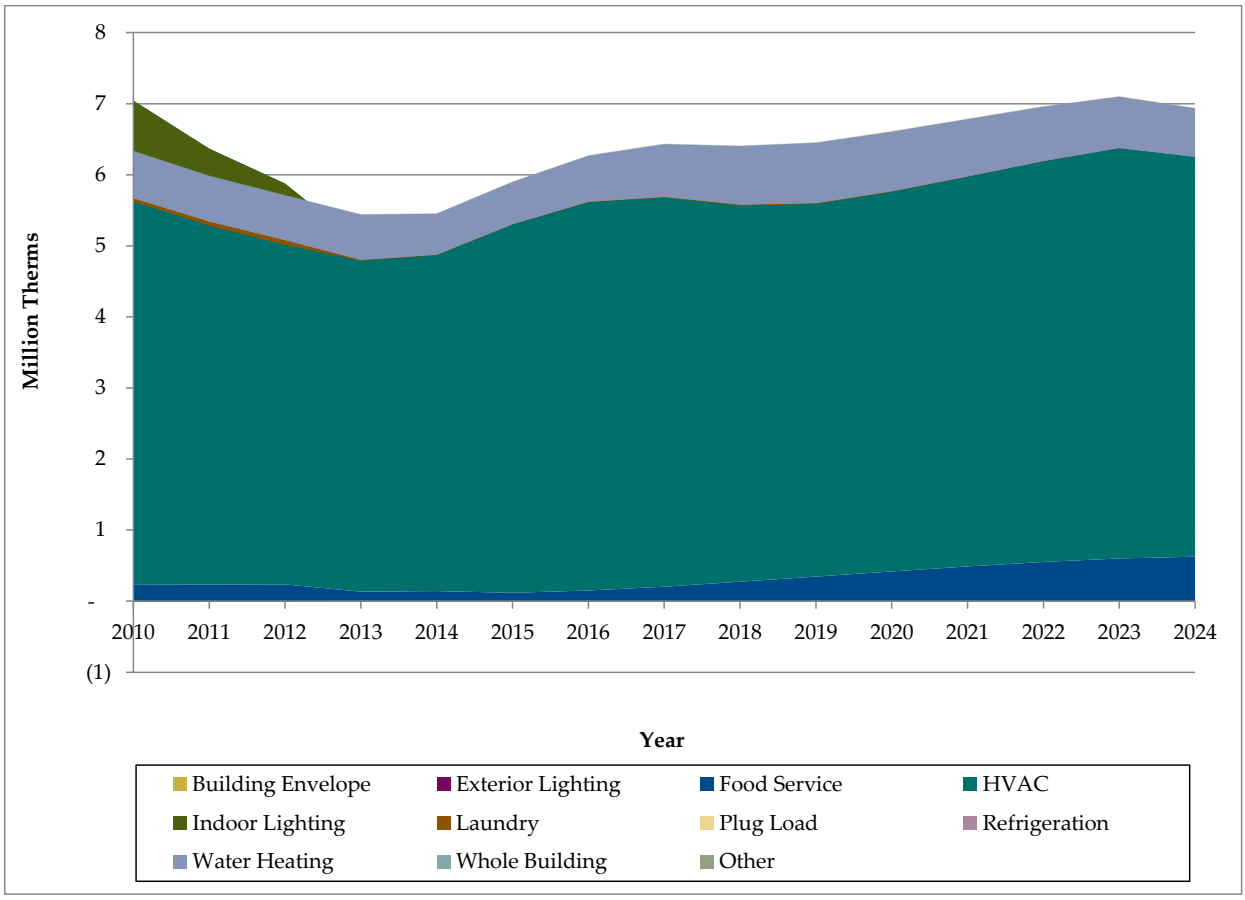
Figure 30. PG&E Commercial Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



5.2.2 Gross Incremental Market Savings Potential

Figure 31 presents the gross incremental market potential for gas energy savings. The gas energy savings potential is calculated to be 7 million therms in 2010 and just under 7 million therms in 2024.

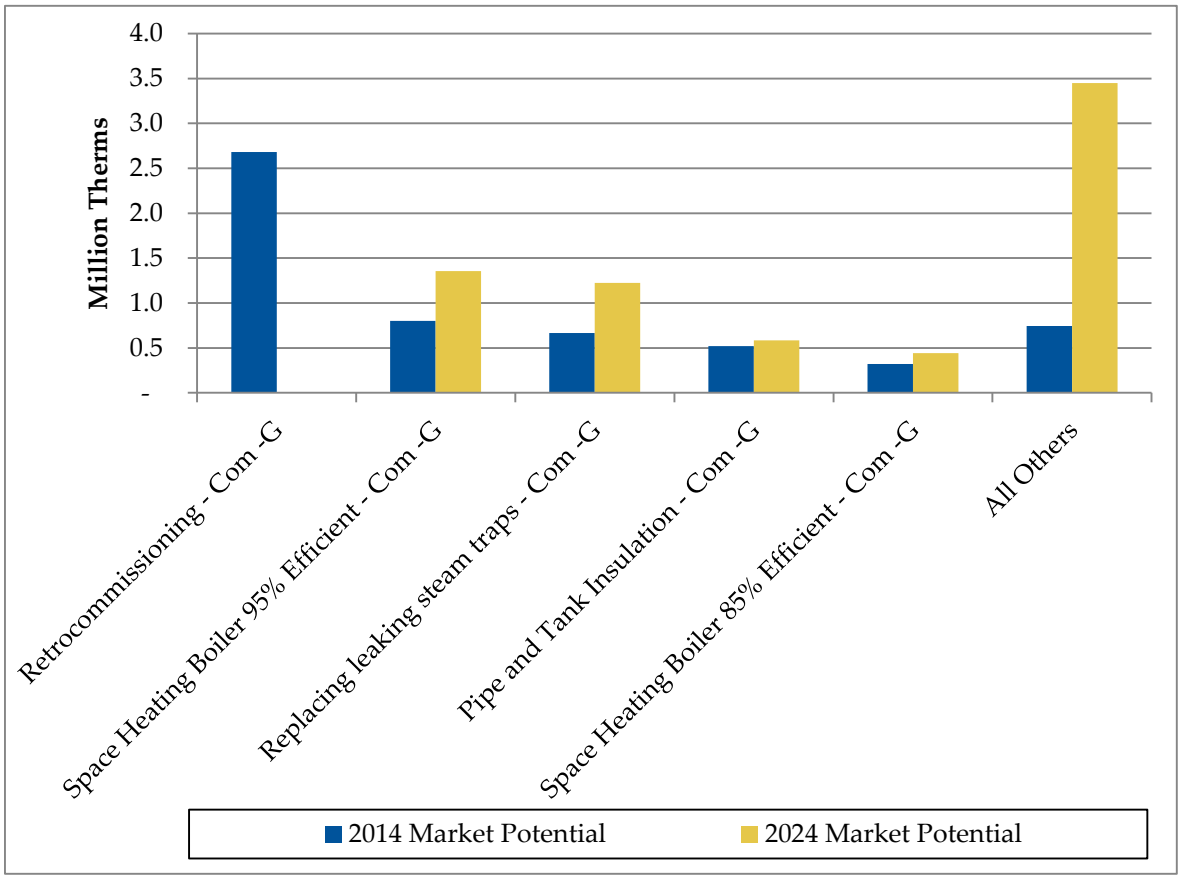
Figure 31. PG&E Commercial Gross Incremental Market Gas Potential for 2010 through 2024 (Million Therms)



5.2.3 Highest Energy Savings Measure

Figure 32 presents the top gas energy savings measures in PG&E residential service territory. These measures represent 87% of market potential in 2014 and 51% of market potential in 2024.

Figure 32 PG&E Commercial Market Potential Top Ten Measures (Therms)



6 Energy Efficiency Potential in Existing SCE Commercial Buildings

6.1 Electric Efficiency Potential in Existing SCE Commercial Buildings

6.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 33 presents the technical, economic, and cumulative market energy savings potential for existing residential buildings in SCE service territory. Technical energy savings potential varies from approximately 7,200 GWh (in 2010) to 9,200 GWh (in 2024). The economic potential follows an identical path, just from 6,600 GWh (in 2010) to 8,800 GWh (in 2024). Cumulative market potential steadily increases over the forecast from 2,000 GWh (in 2010) to just over 6,000 GWh (in 2024). The technical and economic potential show a sharp increase in 2013; this is due to the introduction of new measures and ETs to the utility portfolio.

Figure 33. SCE Commercial Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

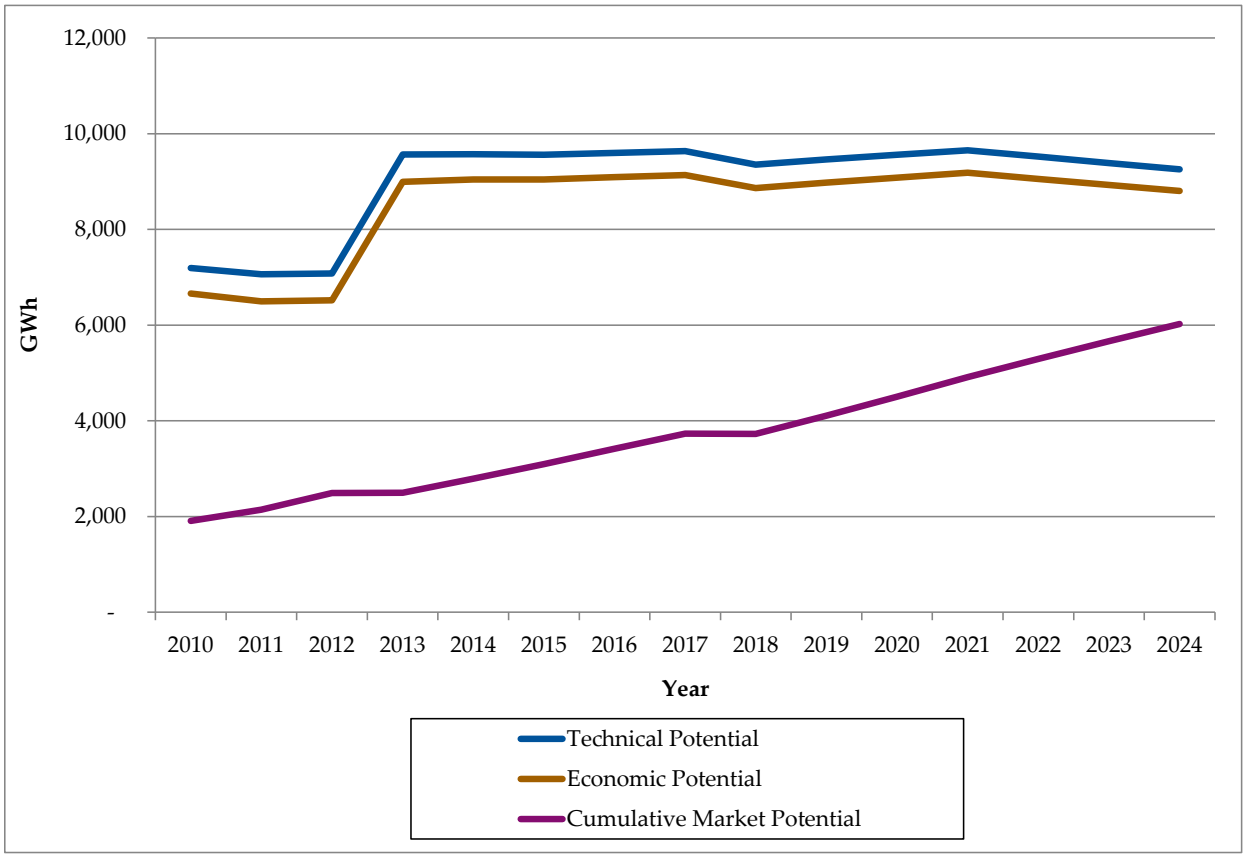
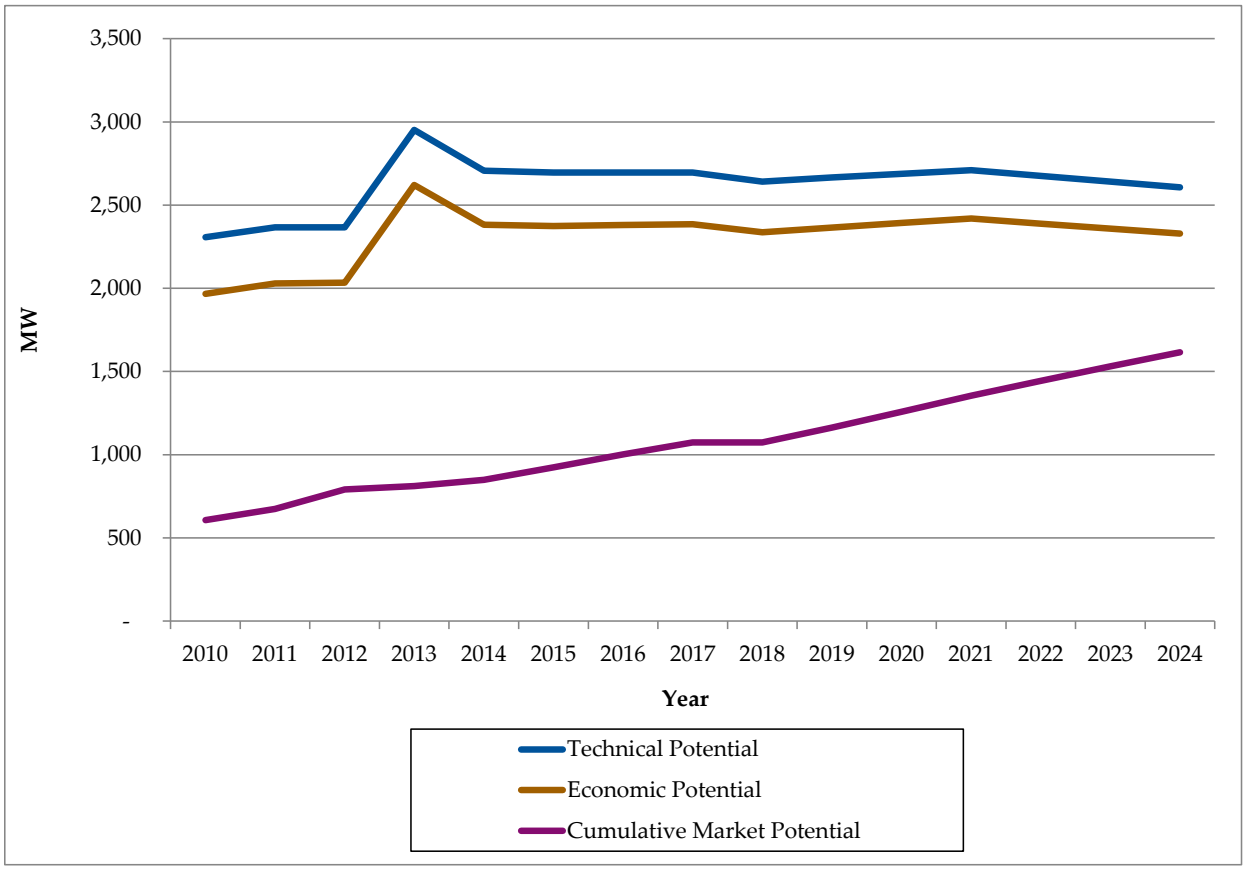


Figure 34 presents the gross technical, economic and cumulative market demand savings potential in SCE service territory from 2010 through 2024. All three curves follow similar paths to that of energy potential.

Figure 34. SCE Commercial Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



6.1.2 Gross Incremental Market Potential

The gross incremental market potential for existing commercial buildings in SCE service territory is presented in Figure 35. The gross incremental market potential is calculated to be approximately 425 GWh in 2010 and a little less than 400 GWh in 2024. The increase in HVAC potential is due to the introduction of emerging HVAC technologies. This easily makes up for the decrease in indoor lighting potential in 2013 due to codes and standards. The increase in savings potential for indoor lighting in 2018 is explained in more detail in the main report; see the text accompanying Figure 38, Section 7.2.1 of the main report.[1]

[1] CPUC. *Analysis To Update Energy Efficiency Potential, Goals, And Targets For 2013 And Beyond: Track 1*. April 2012

Figure 35. SCE Commercial Gross Incremental Market Potential for 2010 through 2024 (GWh)

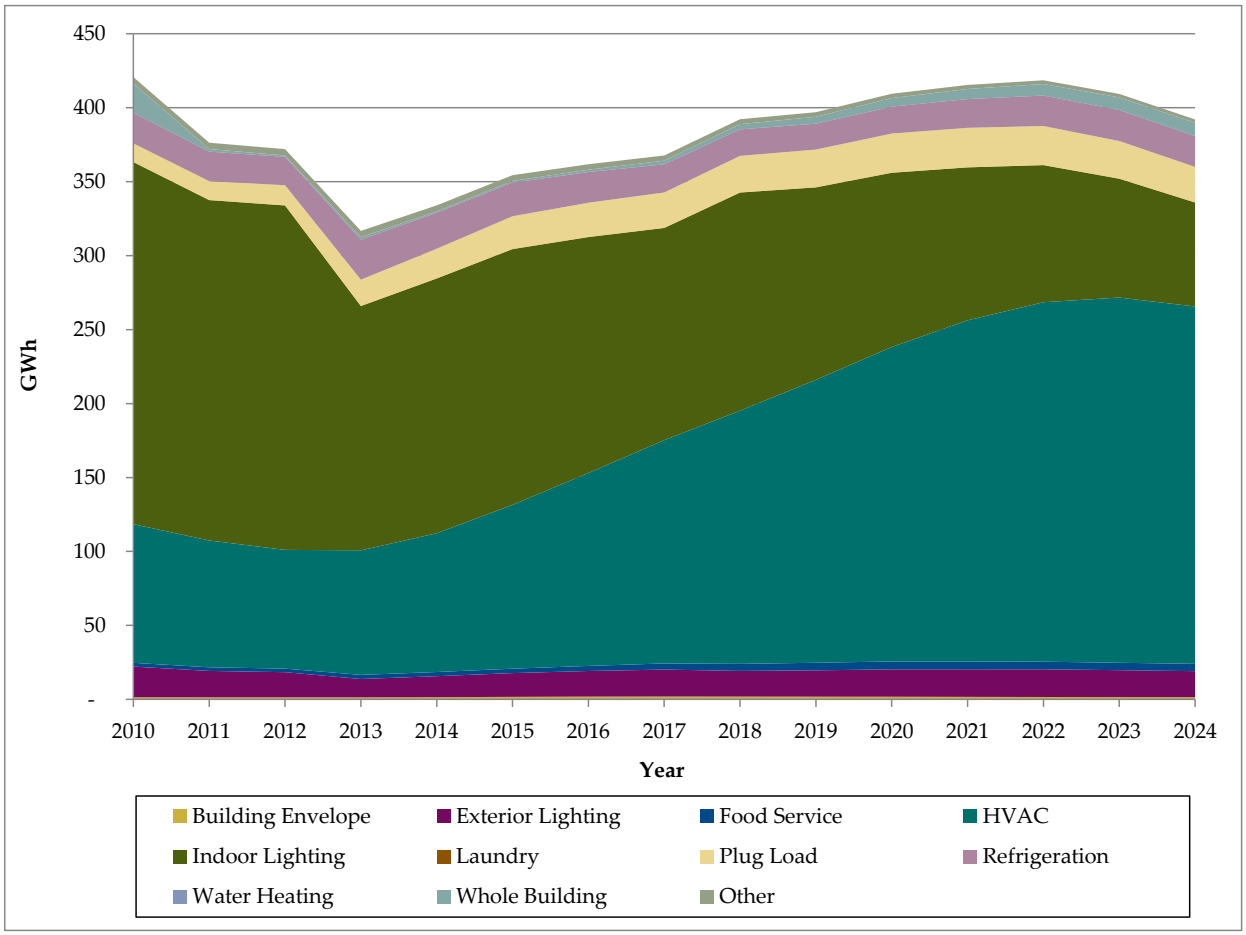
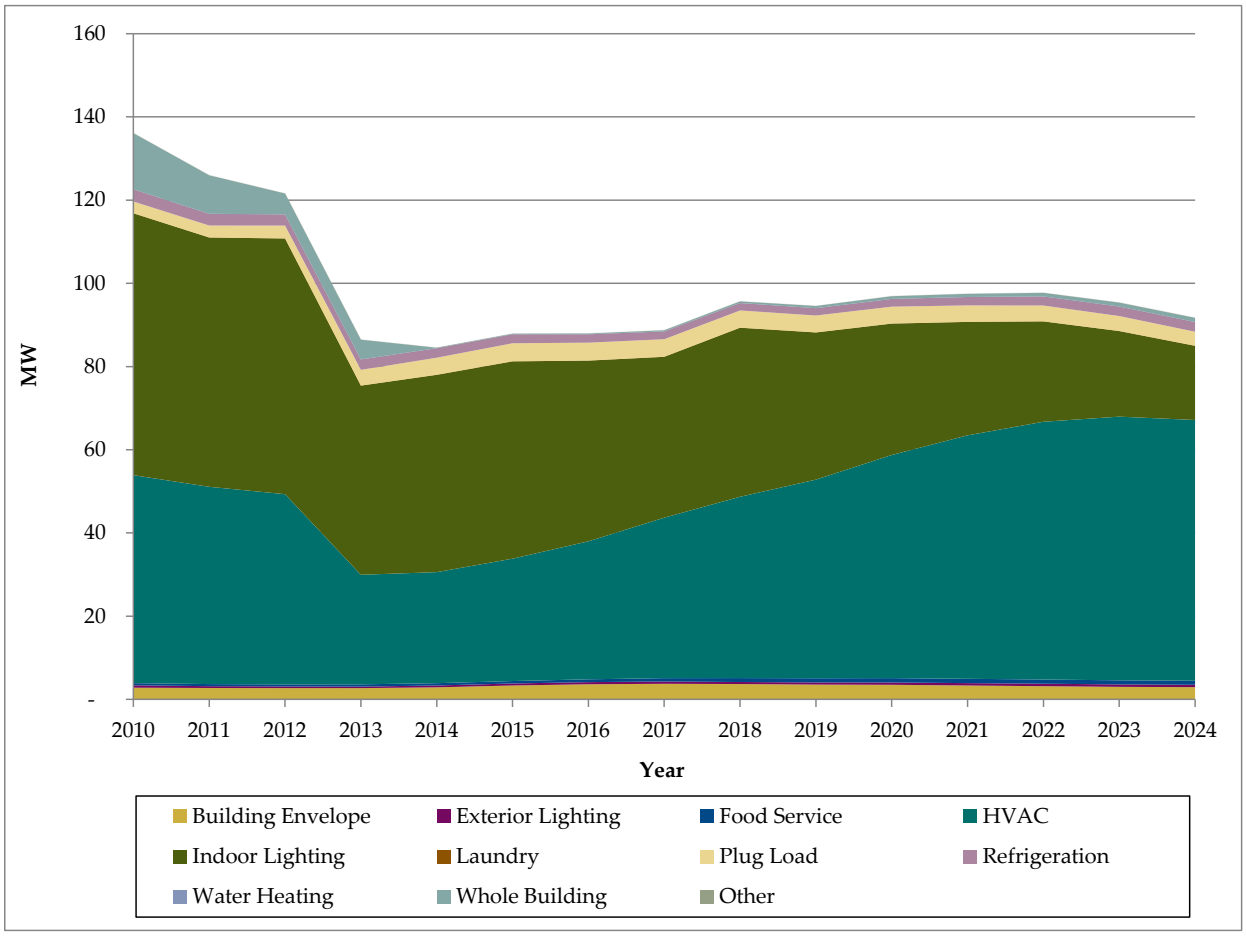


Figure 36 presents the gross incremental demand savings potential for existing buildings in SCE service territory. This graph follows a trend very similar to the gross incremental energy savings potential curve. It varies from 138 MW in 2010, to approximately 90 MW in 2024. The increase in savings potential for indoor lighting in 2018 is explained in more detail in the main report; see the text accompanying Figure 38, Section 7.2.1 of the main report.[2]

[2] CPUC. *Analysis To Update Energy Efficiency Potential, Goals, And Targets For 2013 And Beyond: Track 1*. April 2012

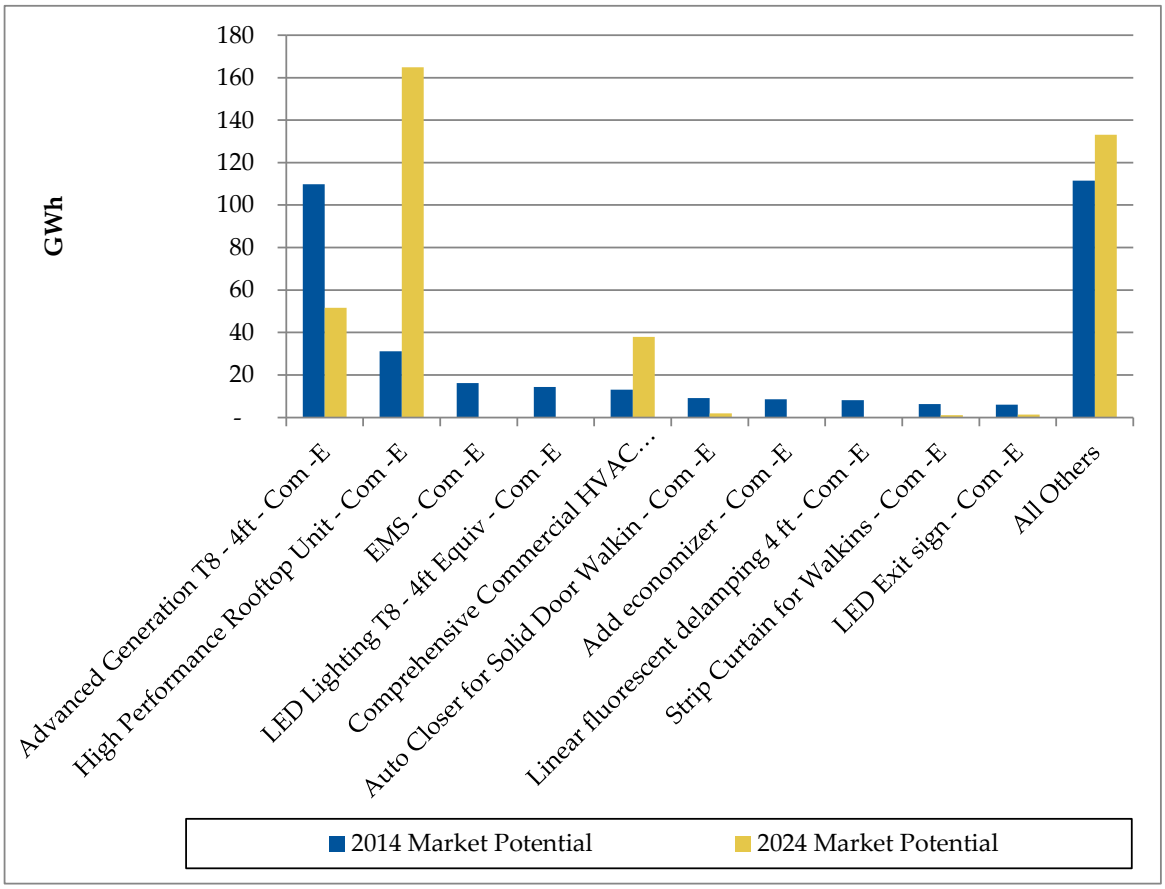
Figure 36. SCE Commercial Gross Incremental Market Demand Potential for 2010 through 2024 (MW)



6.1.3 Highest Energy Savings Measures

Figure 37 presents a list of the top ten measures in SCE service territory. These top ten measures contribute approximately 67% of total market potential in existing residential buildings in 2014 and 66% of market potential in 2024.

Figure 37. SCE Commercial Market Potential Top Ten Measures (GWh)



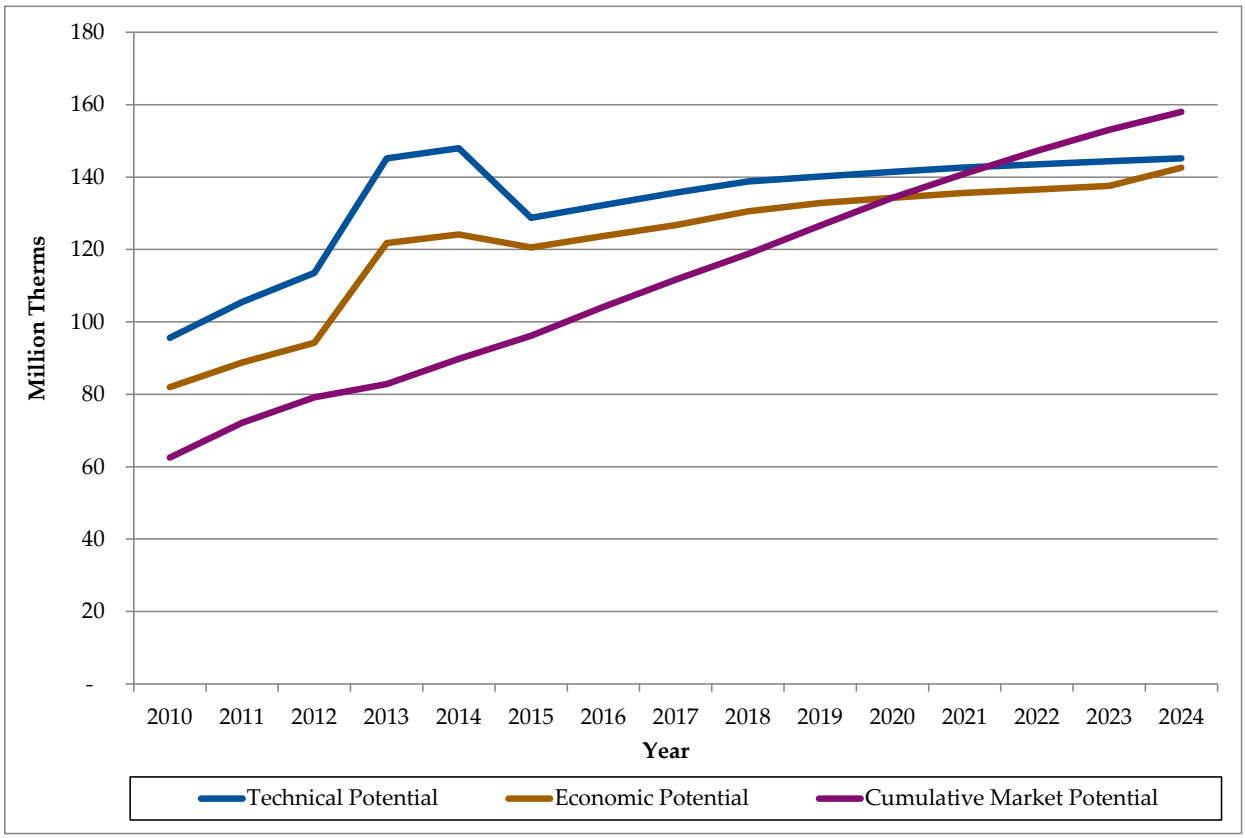
7 Energy Efficiency Potential in Existing SCG Commercial Buildings

7.1 Gas Efficiency Potential in Existing SCG Commercial Buildings

7.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 38 presents the technical, economic and cumulative market gas energy savings potential in existing buildings in SCG service territory. The technical potential a little over 95 million therms in 2010 and a little more than 140 million therms in 2024; the economic potential a little more than 80 million therms in 2010 and a little more that 140 million therms in 2024. Cumulative market steadily increases from 60 million therms in 2010 up to 160 million therms in 2024. Cumulative market potential appears to be higher than technical potential in 2024; however, the technical potential plotted is the incremental annual potential and cannot be compared to cumulative potential. Cumulative market potential begins at a high value due to high historic claimed savings from 2006-2010. While these values are retained for our cumulative calculations, they are adjusted as appropriate for new incremental potential going forward.

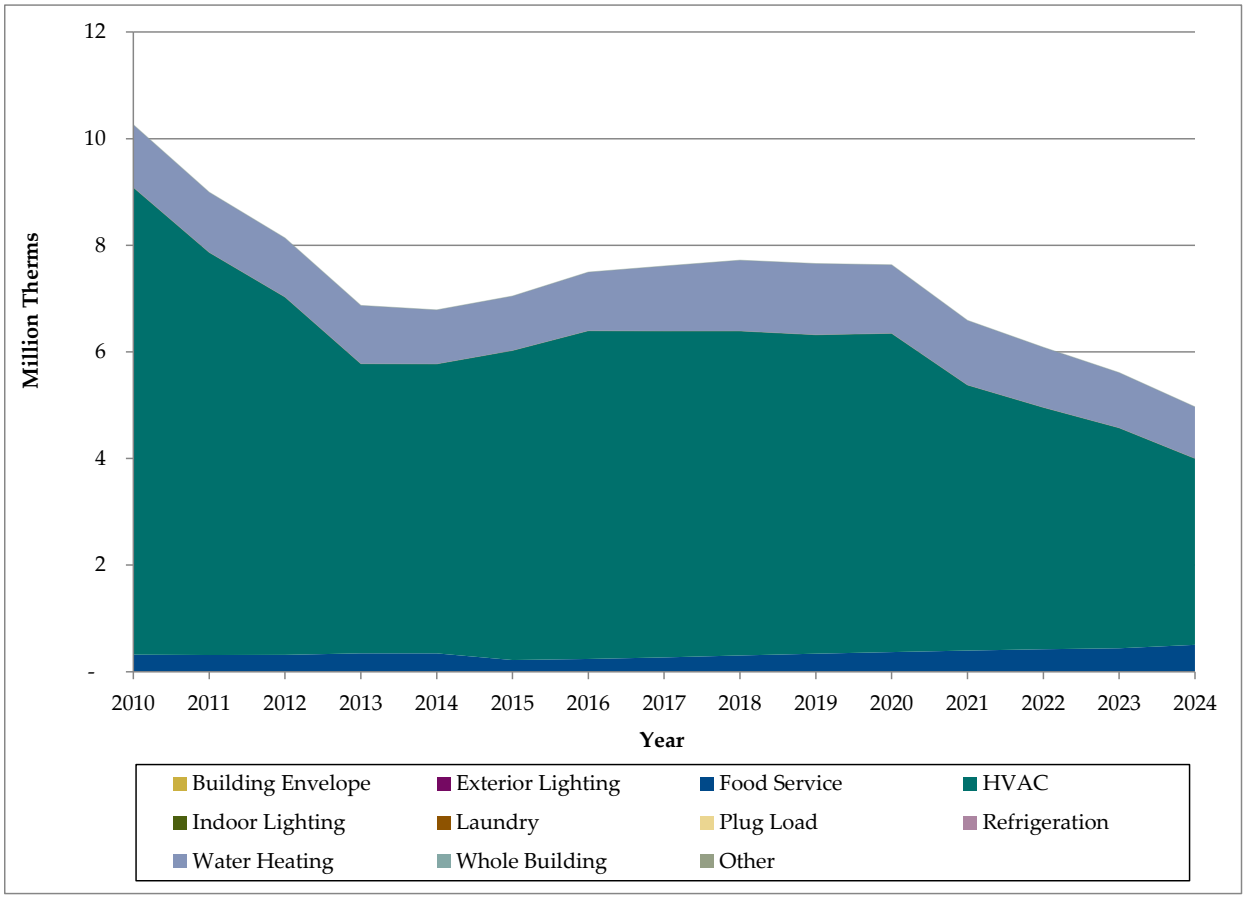
Figure 38. SCG Commercial Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



7.1.2 Gross Incremental Market Savings Potential

Figure 39 presents the gross incremental market potential for gas energy savings. The gas energy savings potential is calculated to be 10 million therms in 2010 and 5 million therms in 2024. The decrease in savings from 2010 to 2013 is a continuation of the trending decrease in IOU claimed commercial sector gas savings from 2007 to 2010. In 2013 the trend reverses as certain existing technologies become more cost effective while new technologies become available.

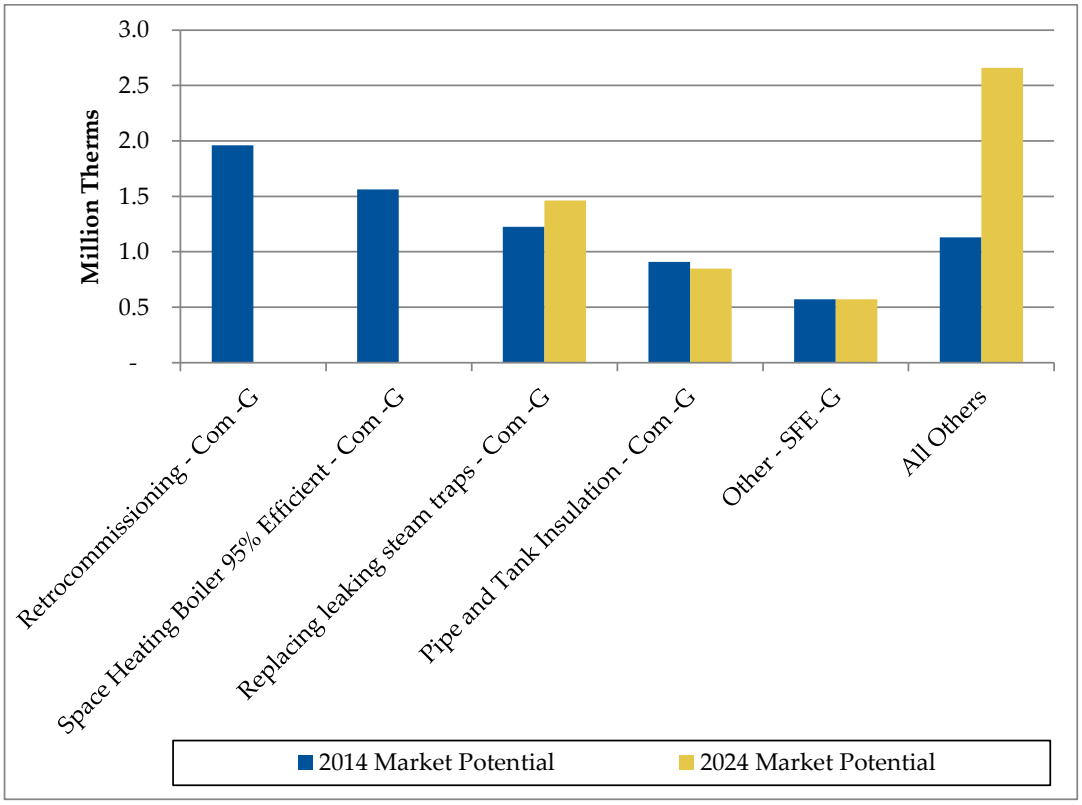
Figure 39. SCG Commercial Gross Incremental Gas Potential for 2010 through 2024 (Million Therms)



7.1.3 Highest Energy Savings Measure

Figure 40 presents the top gas energy savings measures in SCG residential service territory. These measures make up 85% of market potential in 2014 and 52% of market potential in 2024.

Figure 40. SCG Commercial Market Potential Top Ten Measures (Therms)


3.0
2.5
2.0
1.5
1.0
0.5
-
Million Therms
Retrocommissioning - Com -G
Space Heating Boiler 95% Efficient - Com -G
Replacing leaking steam traps - Com -G
Pipe and Tank Insulation - Com -G
Other - SFE -G
All Others
2014 Market Potential
2024 Market Potential

8 Energy Efficiency Potential in Existing SDG&E Commercial Buildings

8.1 Electric Efficiency Potential in Existing SDG&E Commercial Buildings

8.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 41 presents the technical, economic and cumulative market energy savings potential for existing residential buildings in SDG&E service territory. Technical energy savings potential varies from approximately 1,900 GWh (in 2010) to 2,100 GWh (in 2024). The economic potential varies from approximately 1,800 GWh (in 2010) to a little more than 2,000 GWh (in 2024). Cumulative market potential climbs from 800 GWh in 2010 to 1,750 GWh in 2024. The technical and economic potential show a sharp increase in 2013; this is due to the introduction of new measures and ETs to the utility portfolio. These ETs start to be shown in later years of the market potential, as market barriers break down and the ETs become more cost effective and well known in the market.

Figure 41. SDG&E Commercial Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

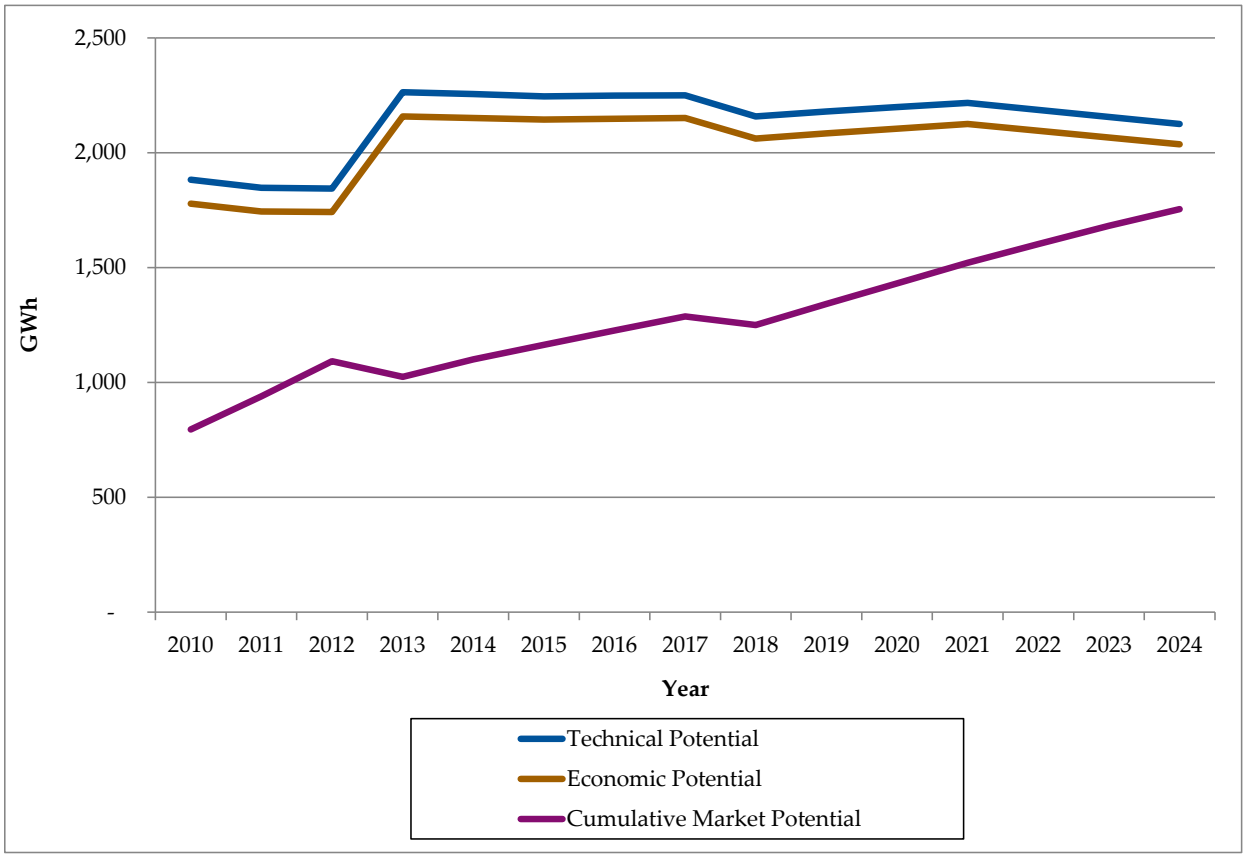
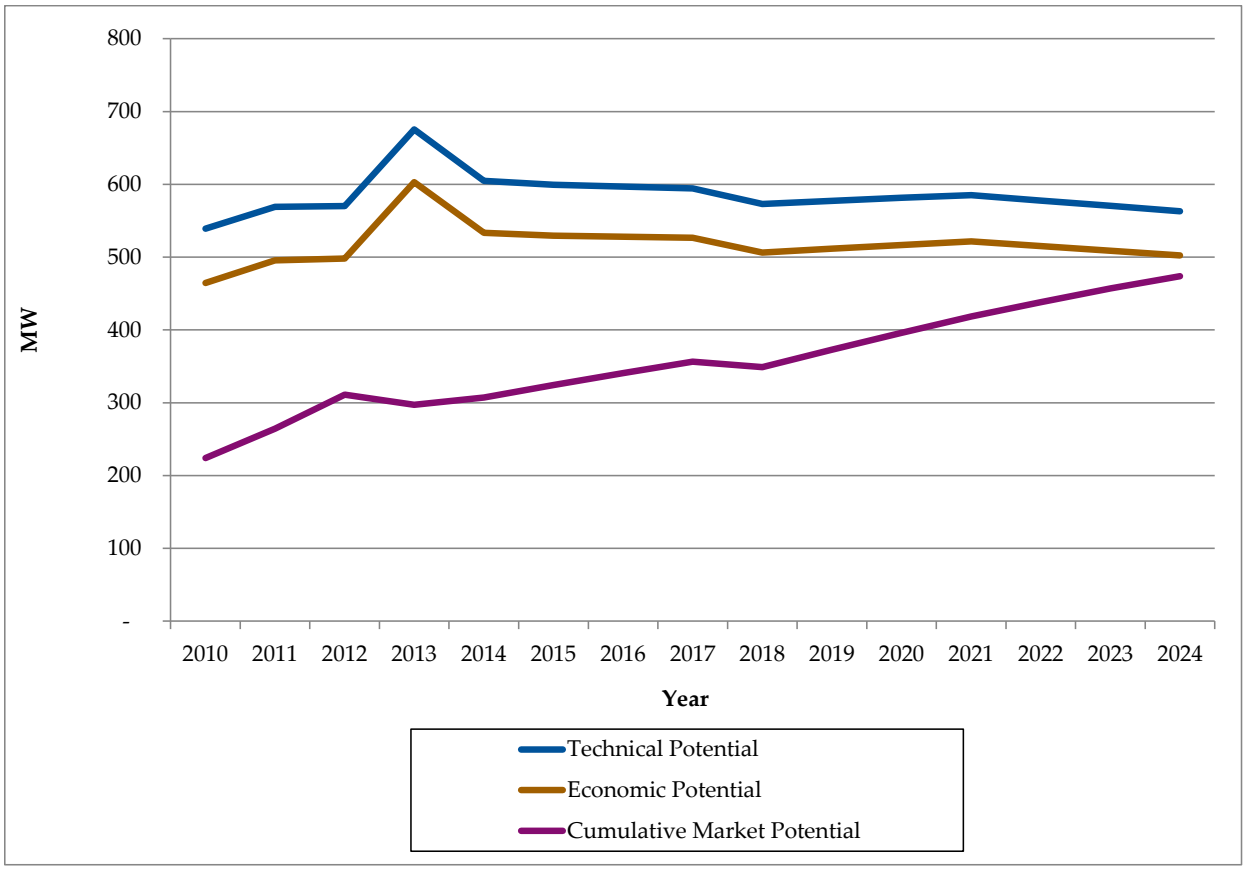


Figure 42 presents the gross technical and economic demand savings potential in SDG&E service territory from 2010 through 2024. All the curves follow a very similar path to that of energy potential.

Figure 42. SDG&E Commercial Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



8.1.2 Gross Incremental Market Potential

The gross incremental market potential for existing commercial buildings in SDG&E service territory is presented in Figure 43. The gross incremental market potential is calculated to be approximately 200 GWh in 2010 and approximately 80 GWh in 2024. The increase in savings potential for indoor lighting in 2018 is explained in more detail in the main report; see the text accompanying Figure 38, Section 7.2.1 of the main report.[3]

[3] CPUC. *Analysis To Update Energy Efficiency Potential, Goals, And Targets For 2013 And Beyond: Track 1*. April 2012

Figure 43. SDG&E Commercial Gross Incremental Market Potential for 2010 through 2024 (GWh)

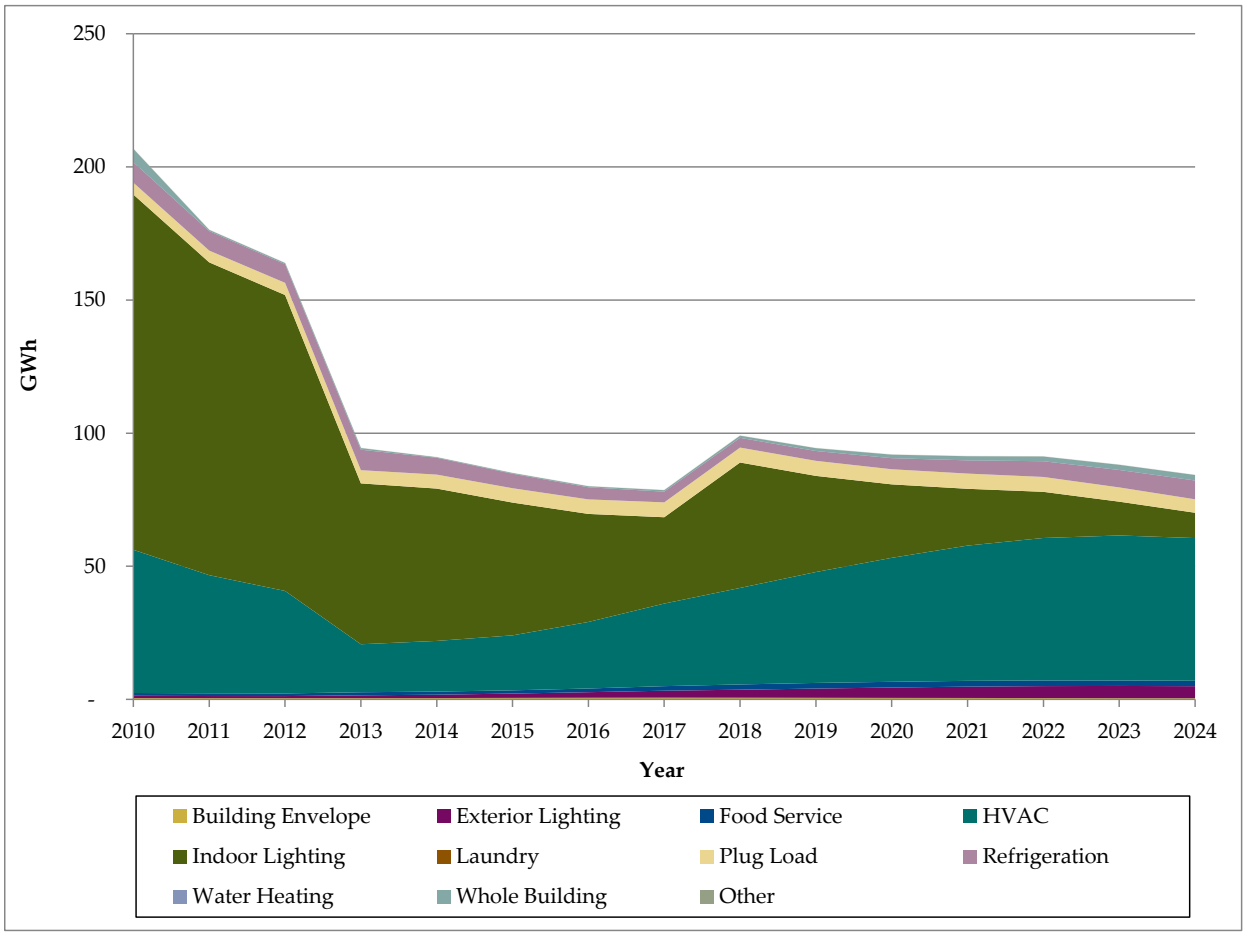
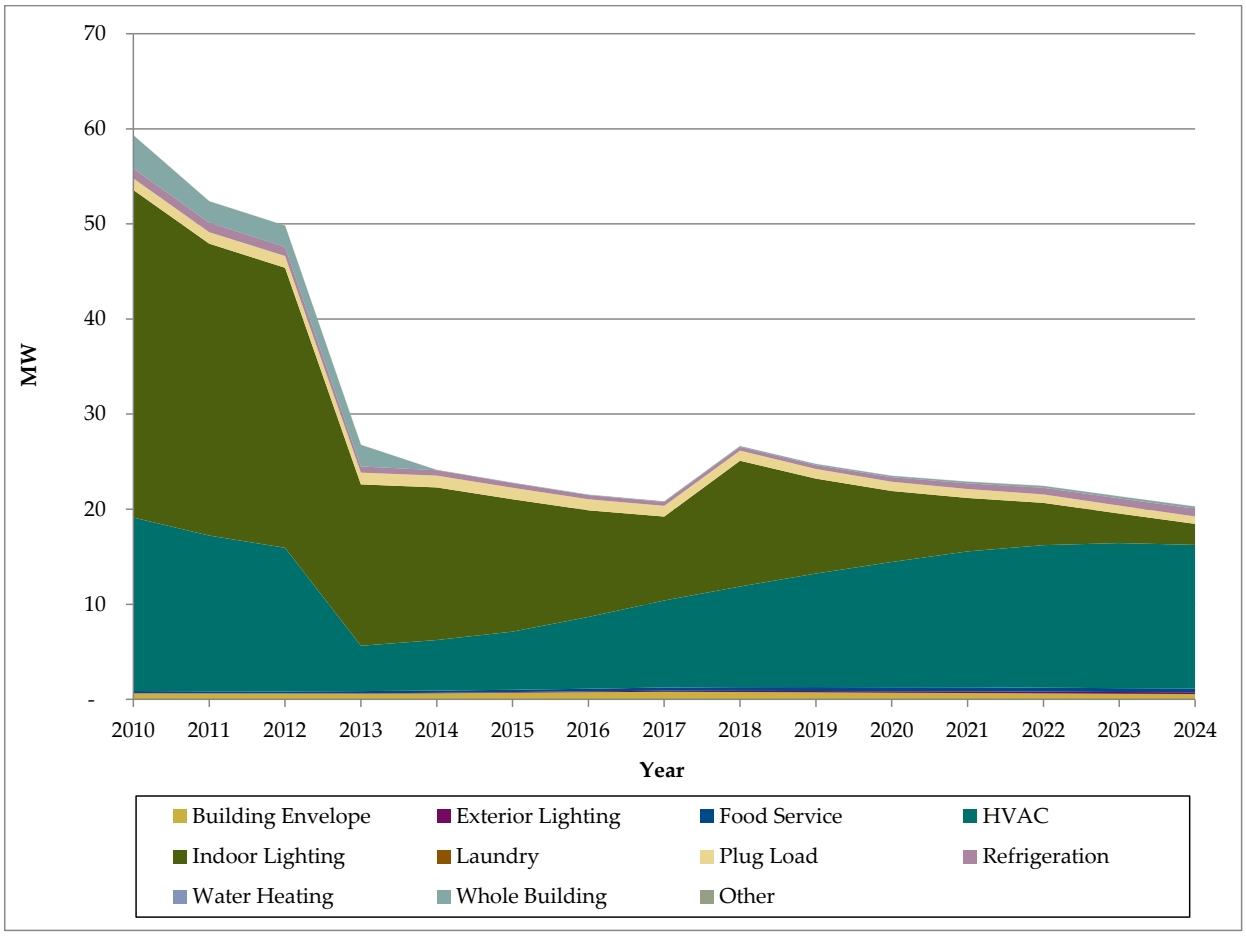


Figure 44 presents the gross incremental demand savings potential for existing buildings in SDG&E service territory. This graph follows a trend very similar to the gross incremental energy savings potential curve. It varies from 60 MW in 2010, to approx. 20 MW in 2024. The increase in savings potential for indoor lighting in 2018 is explained in more detail in the main report; see the text accompanying Figure 38, Section 7.2.1 of the main report.[4]

[4] CPUC. *Analysis To Update Energy Efficiency Potential, Goals, And Targets For 2013 And Beyond: Track 1*. April 2012

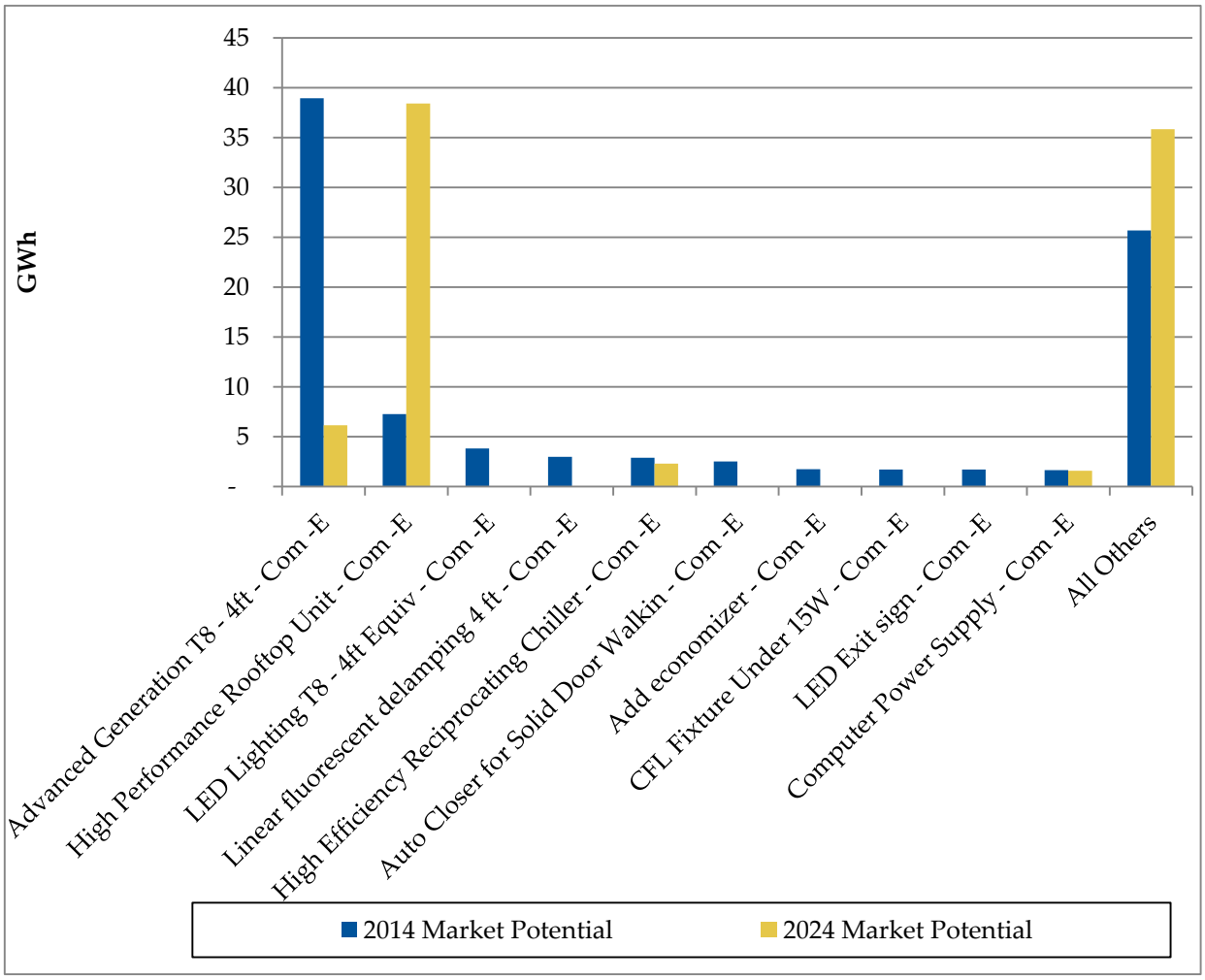
Figure 44. SDG&E Commercial Gross Incremental Market Demand Potential for 2010 through 2024 (MW)



8.1.3 Highest Energy Savings Measures

Figure 45 presents a list of the top ten measures in SDG&E service territory. These measures make up about 72% of market potential in 2014 and about 57% of market potential in 2024.

Figure 45. SDG&E Commercial Market Potential Top Ten Measures (GWh)

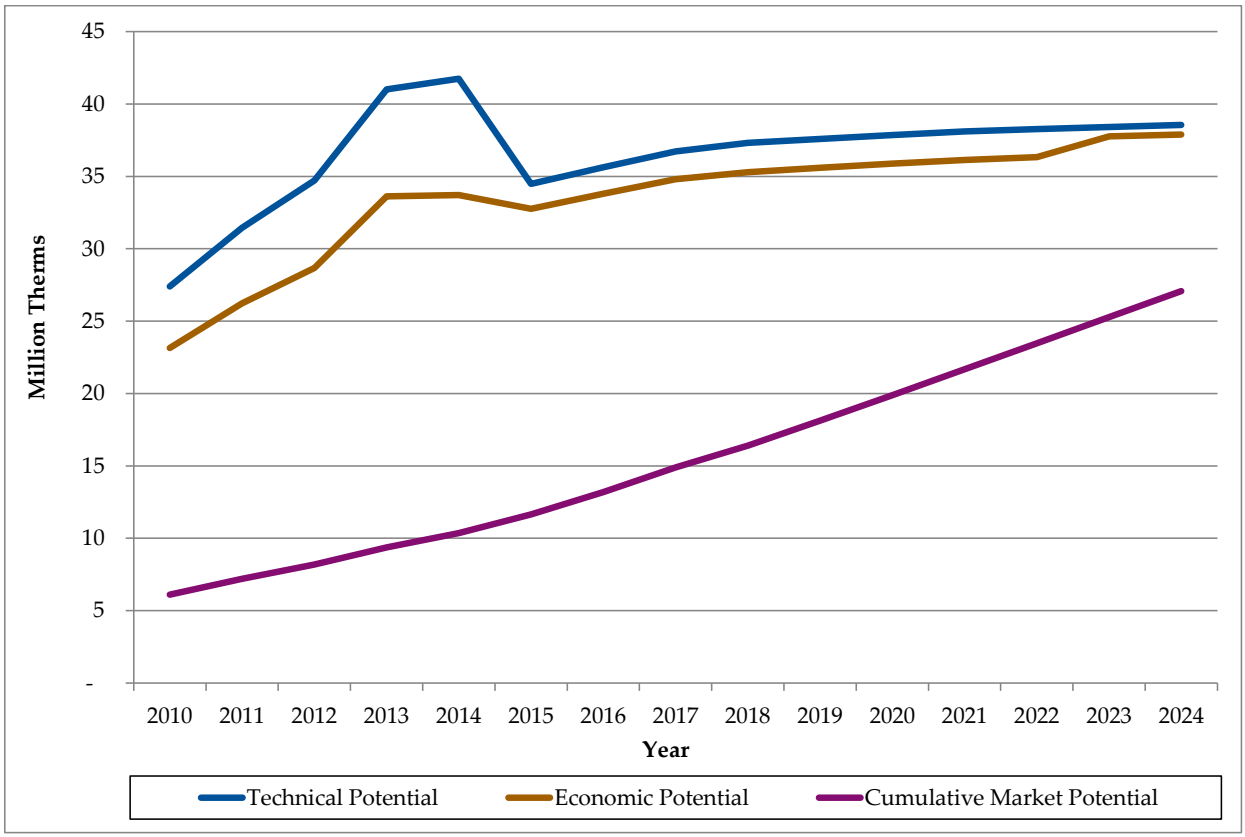


8.2 Gas Efficiency Potential in Existing SDG&E Commercial Buildings

8.2.1 Technical, Economic and Cumulative Market Savings Potential

Figure 46 presents the technical, economic, and cumulative market gas energy savings potential in existing buildings in SDG&E service territory. The technical potential is 27 million therms in 2010 and around 37 million therms in 2024; the economic potential is 23 million therms in 2010 and ends nearly equal to technical potential around 37 million therms. Cumulative market potential steadily increases from 6 million therms up to about 27 million therms in 2024.

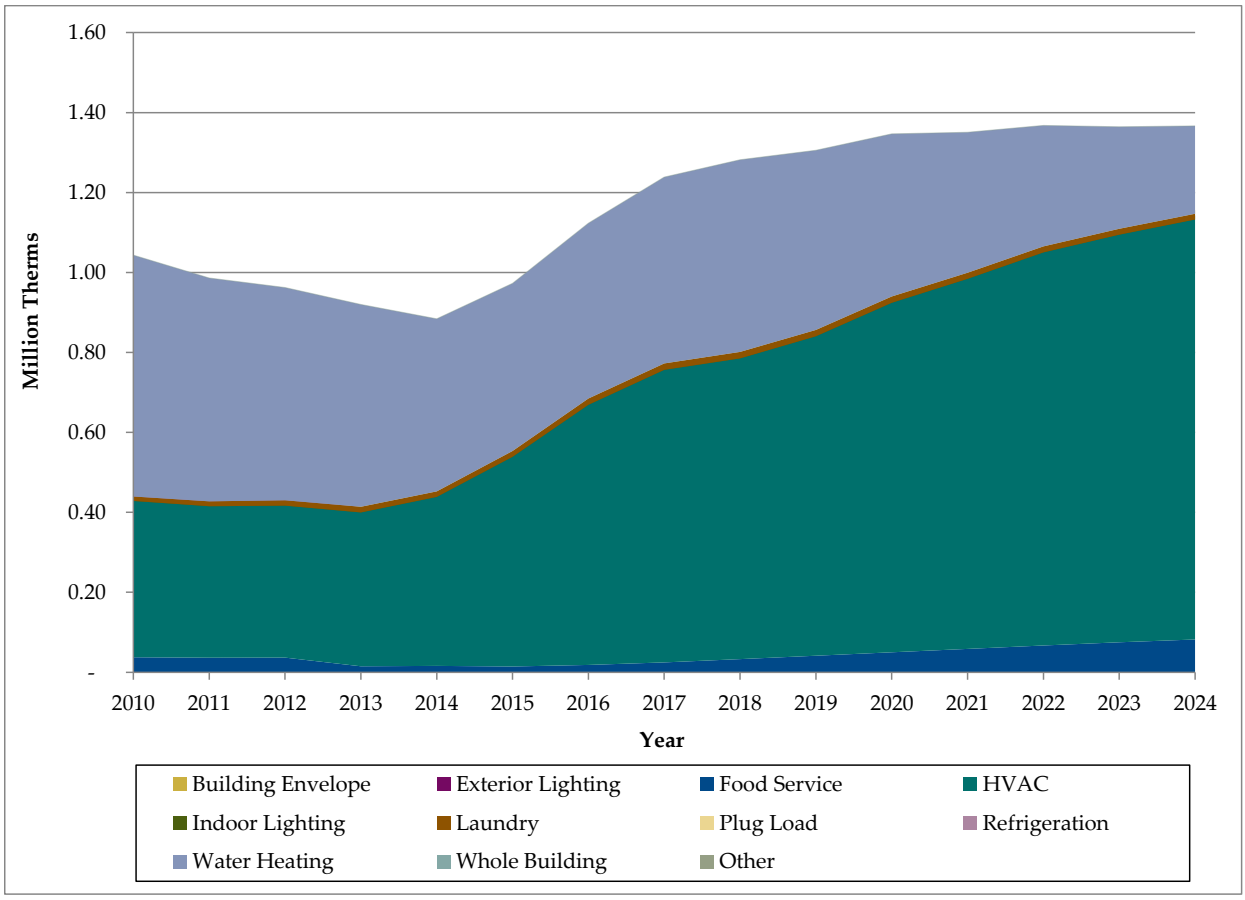
Figure 46. SDG&E Commercial Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



8.2.2 Gross Incremental Market Savings Potential

Figure 47 presents the gross incremental market potential for gas energy savings. The gas energy savings potential is calculated to be 1 million therms in 2010 and 1.35 million therms in 2024. Emerging HVAC technologies steadily begin to have more and more potential savings from their introduction in 2013 to the end of the forecast.

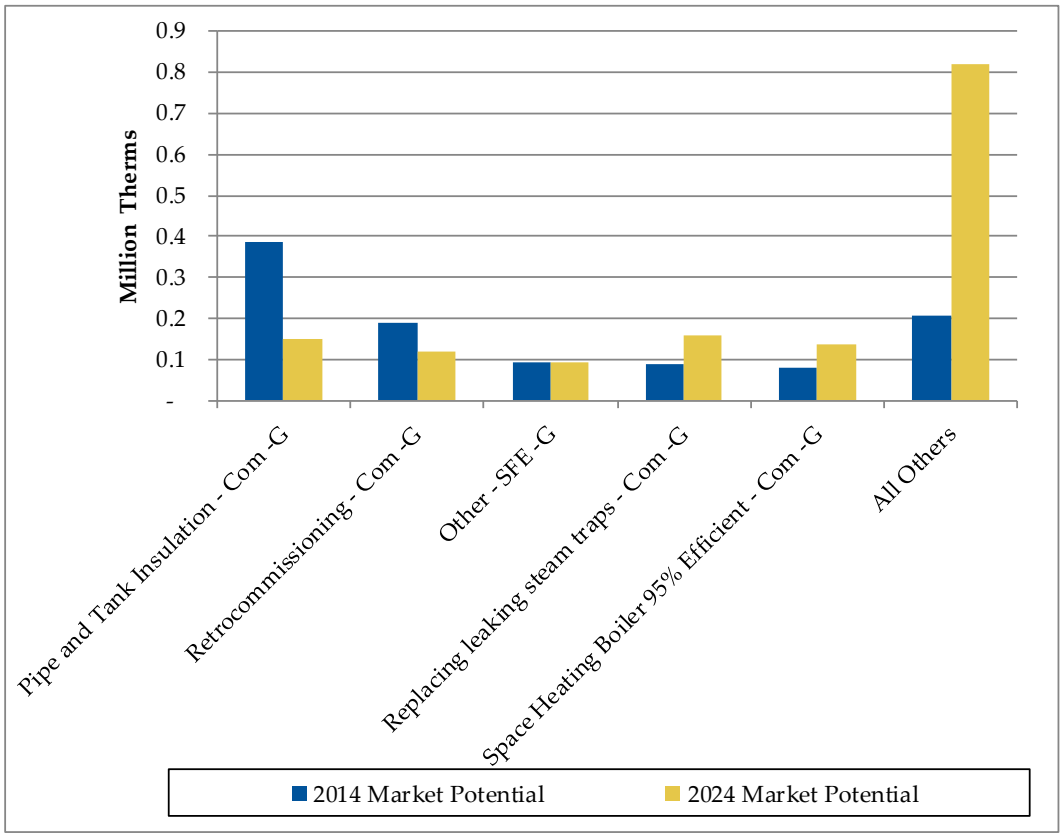
Figure 47. SDG&E Commercial Gross Incremental Gas Potential for 2010 through 2024 (Million Therms)



8.2.3 Highest Energy Savings Measure

Figure 48 presents the top gas energy savings measures in SDG&E residential service territory. These measures make up about 80% of market potential in 2014 and about 45% of market potential in 2024.

Figure 48. SDG&E Commercial Market Potential Top Ten Measures (Therms)



9 Energy Efficiency Potential in Existing PG&E Industrial Buildings

9.1 Electric Efficiency Potential in Existing PG&E Industrial Buildings

9.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 49 presents the technical, economic, and cumulative market energy savings potential in the industrial sector in PG&E territory. Technical energy savings potential in the industrial sector are calculated to be 2,500 GWh in 2010 and 2,700 in 2024. Economic energy savings potential is 2,450 GWh in 2010 and 2,600 GWh in 2024. Cumulative market potential steadily increases from 500 GWh in 2010 to about 1,750 GWh in 2024.

Figure 49. PG&E Industrial Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

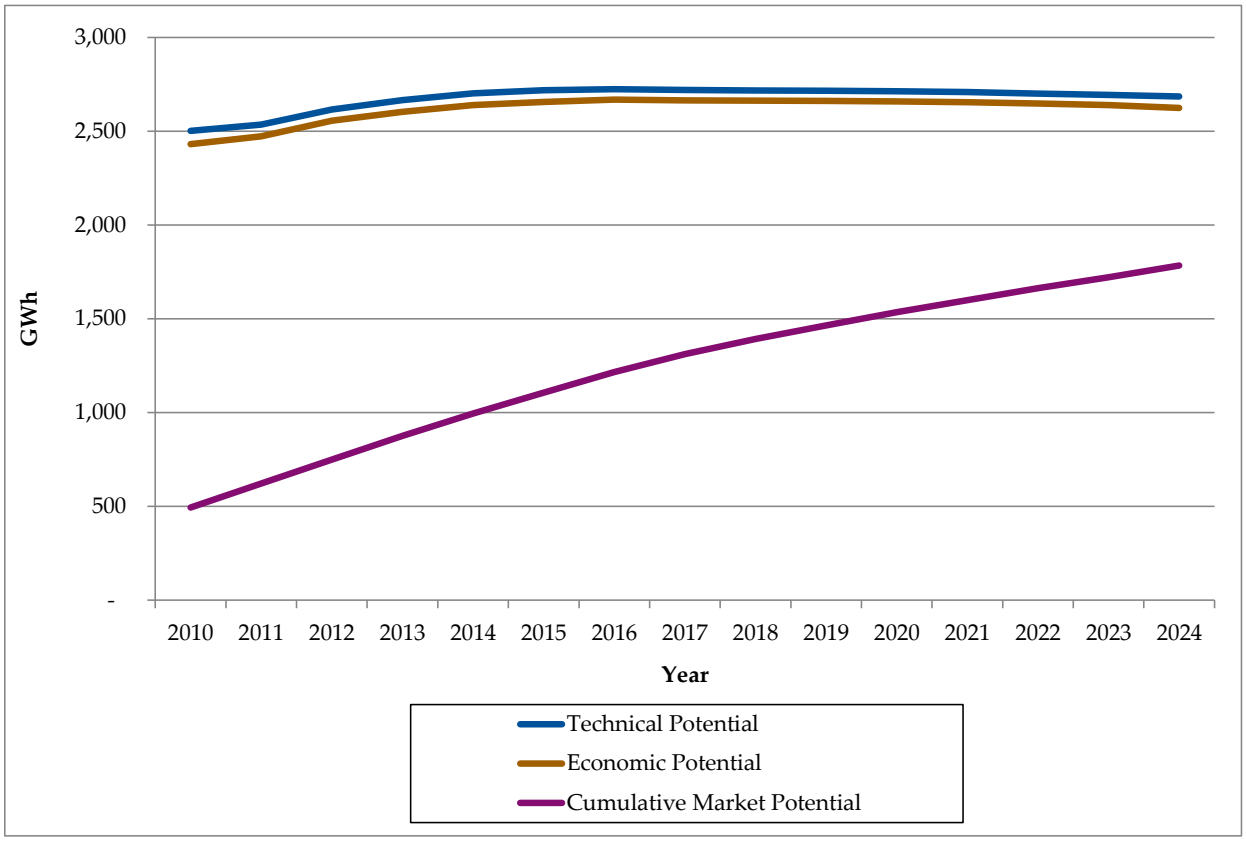
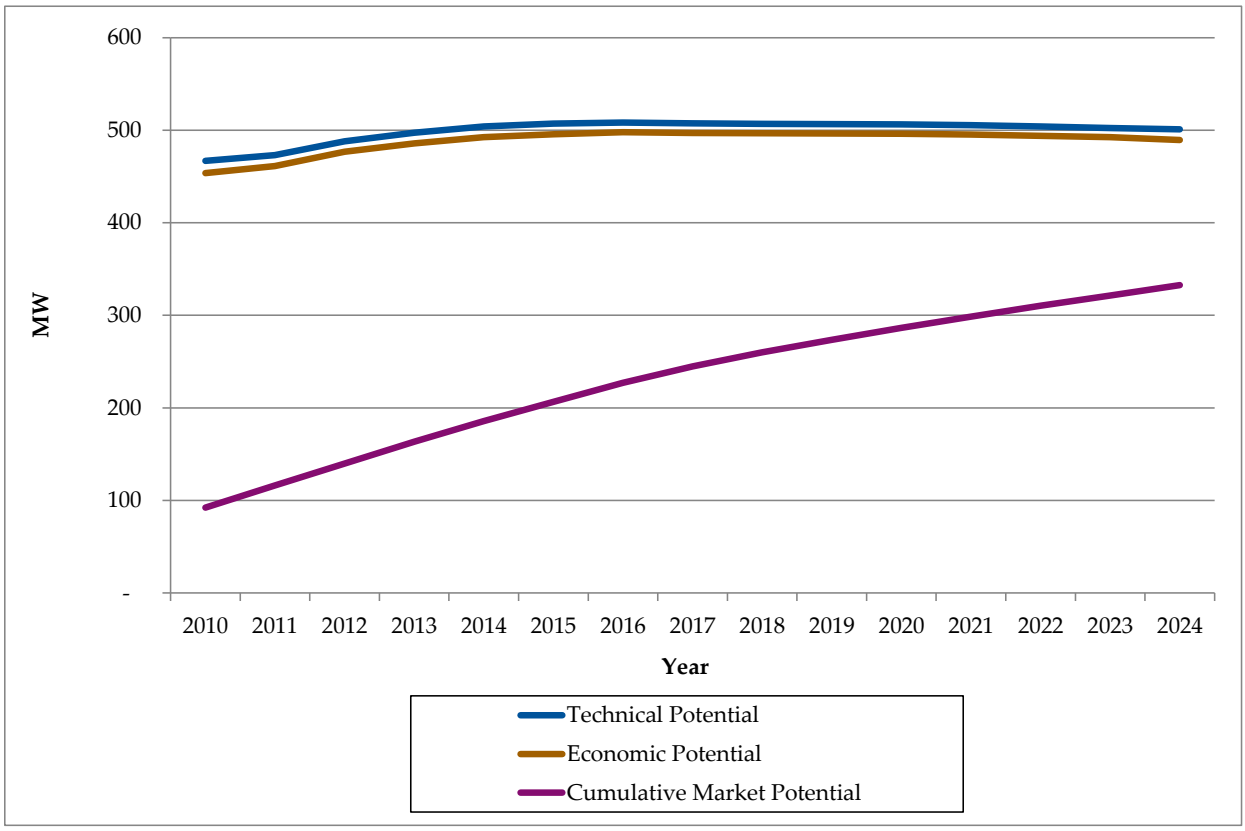


Figure 50 presents the technical, economic and cumulative market demand potential for the industrial sector in PG&E territory, all of which follow similar paths as the energy curves above.

Figure 50. PG&E Industrial Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



9.1.2 Incremental Market Potential

Figure 51 presents the incremental market energy potential for PG&E Industrial. The incremental market potential in the industrial sector remains relatively flat. It is calculated to be approx. 130 GWh in 2010 and 78 GWh in 2024.

Figure 51. PG&E Industrial Gross Incremental Market Potential for 2010 through 2024 (GWh)

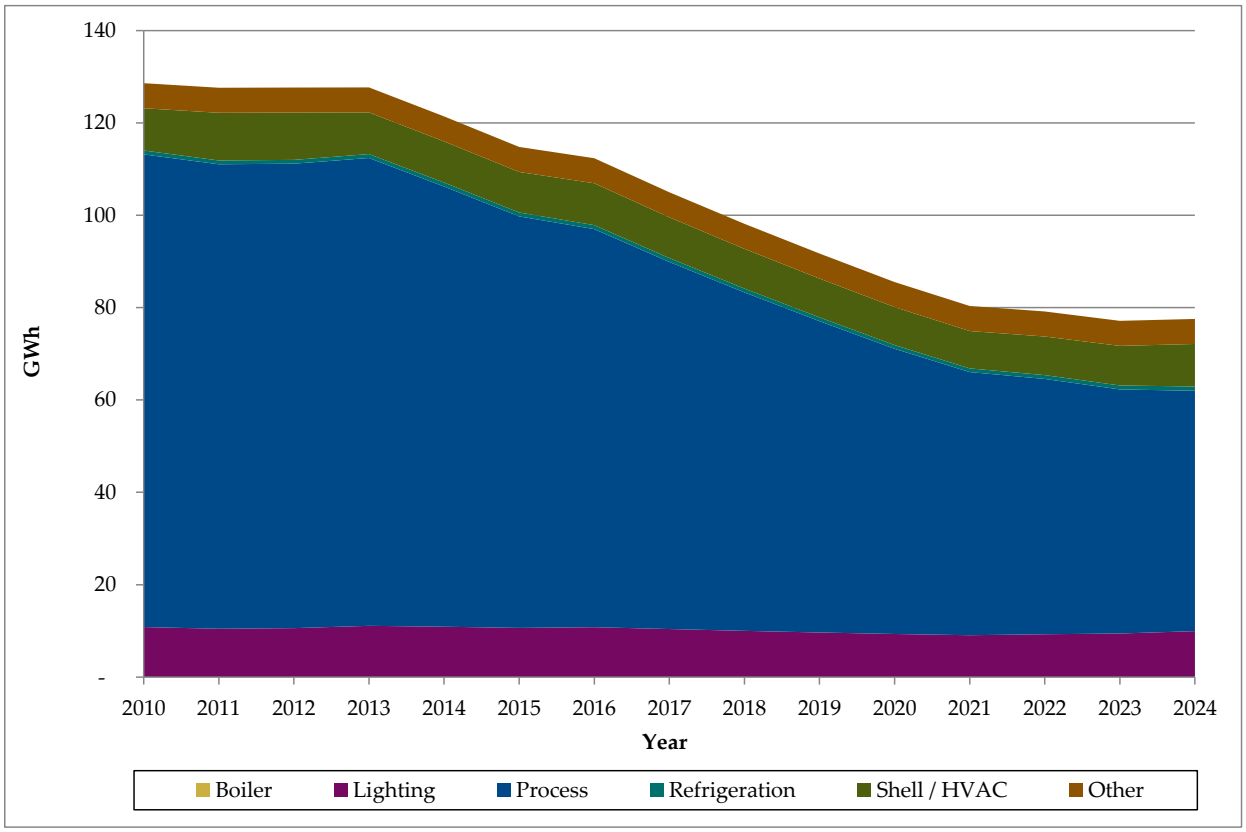
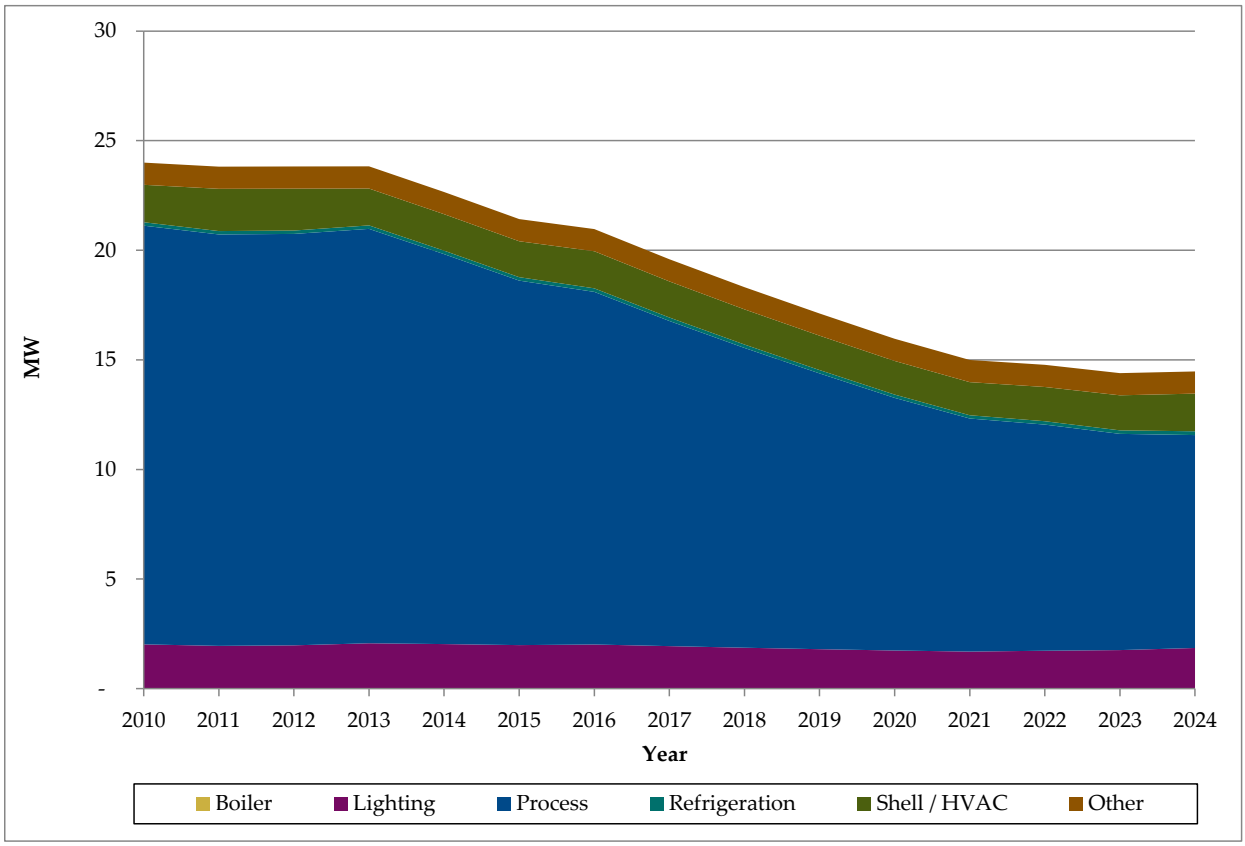


Figure 52 presents the Incremental market demand potential for PG&E Industrial. This begins at 24 MW in 2010 and decreases to about 14 MW in 2024.

Figure 52. PG&E Industrial Gross Incremental Market Potential for 2010 through 2024 (MW)

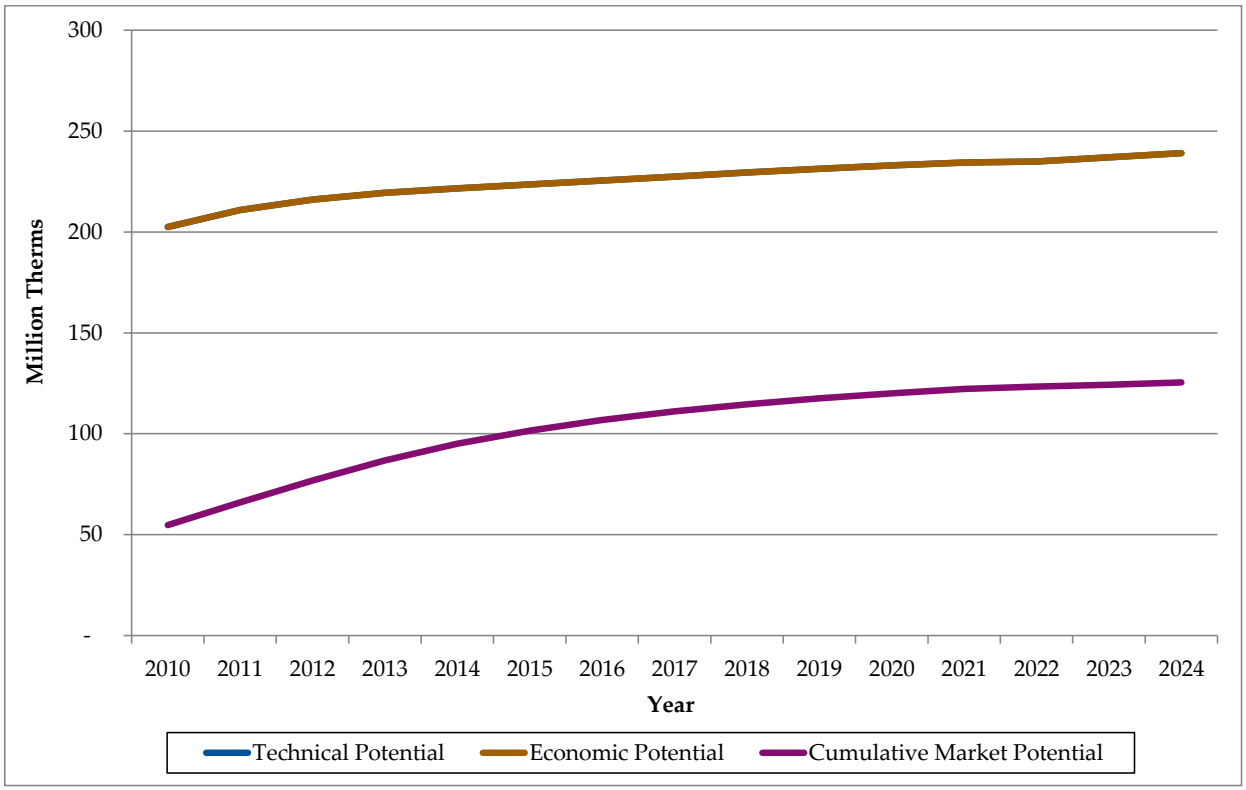


9.2 Gas Efficiency Potential in Existing PG&E Industrial Buildings

9.2.1 Technical, Economic and Cumulative Market Savings Potential

Figure 53 presents the industrial technical, economic, and cumulative market gas savings potential in PG&E service territory. Technical and economic potential are essentially identical, starting at 200 million therms and ending at around 240 million therms. Cumulative market potential increases from around 50 million therms in 2010 to about 125 million therms in 2024.

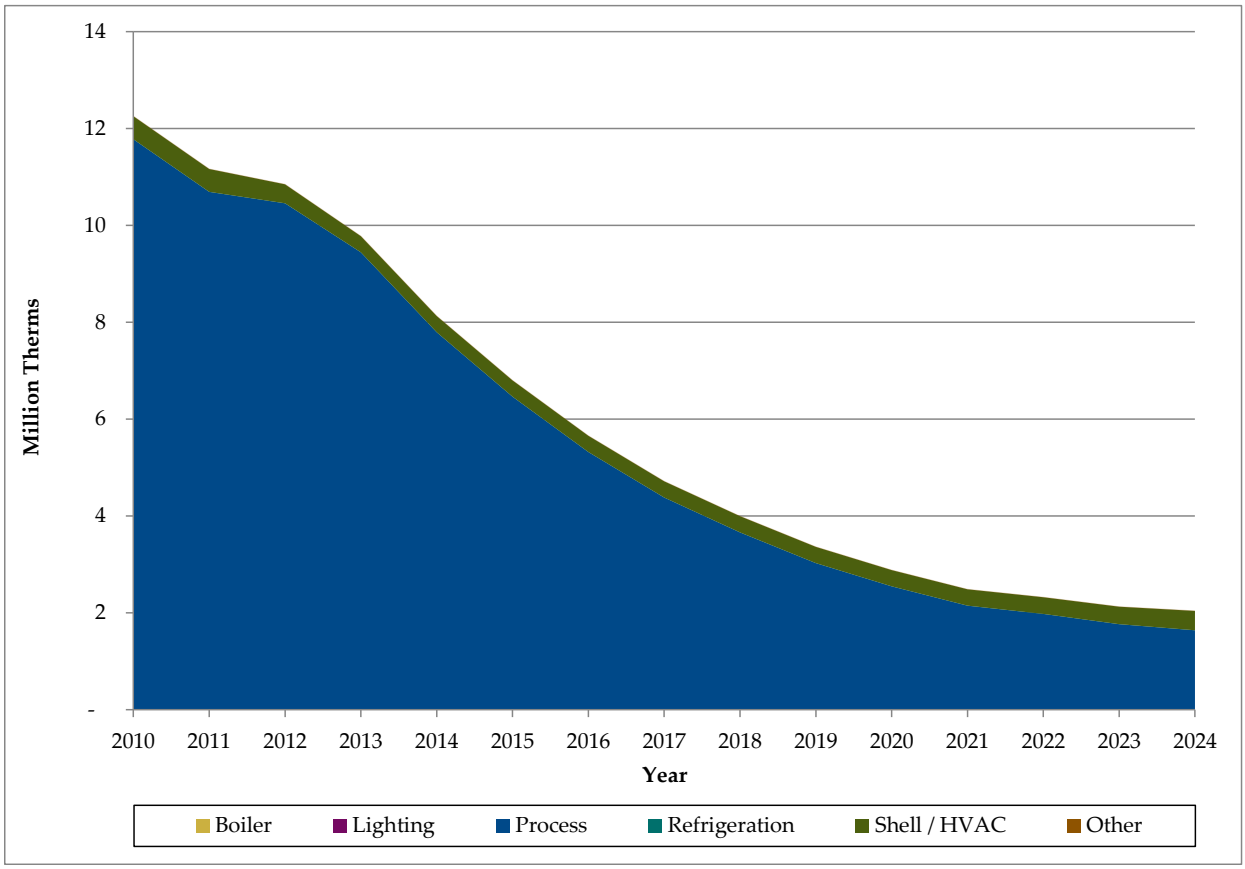
Figure 53. PG&E Industrial Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



9.2.2 Gross Incremental Market Potential

Gross incremental market gas savings potential is calculated to be 12 million therms in 2010 and 2 million therms in 2024. Figure 54 presents the gross incremental market gas energy savings potential in industrial sector in PG&E service territory.

Figure 54. PG&E Industrial Gross Incremental Gas Potential for 2010 through 2024 (Million Therms)



10 Energy Efficiency Potential in Existing SCE Industrial Buildings

10.1 Electric Efficiency Potential in Existing SCE Industrial Buildings

10.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 55 presents the technical, economic, and cumulative market energy savings potential in the industrial sector in SCE territory. Technical energy savings potential in the industrial sector are calculated to be 2,900 GWh and increases to 3,000 GWh in 2024. Economic potential follows the exact same line is just about 500 GWh less than technical potential for the forecast. Cumulative market potential increases from 800 GWh in 2010 to about 2,250 GWh in 2024.

Figure 55. SCE Industrial Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

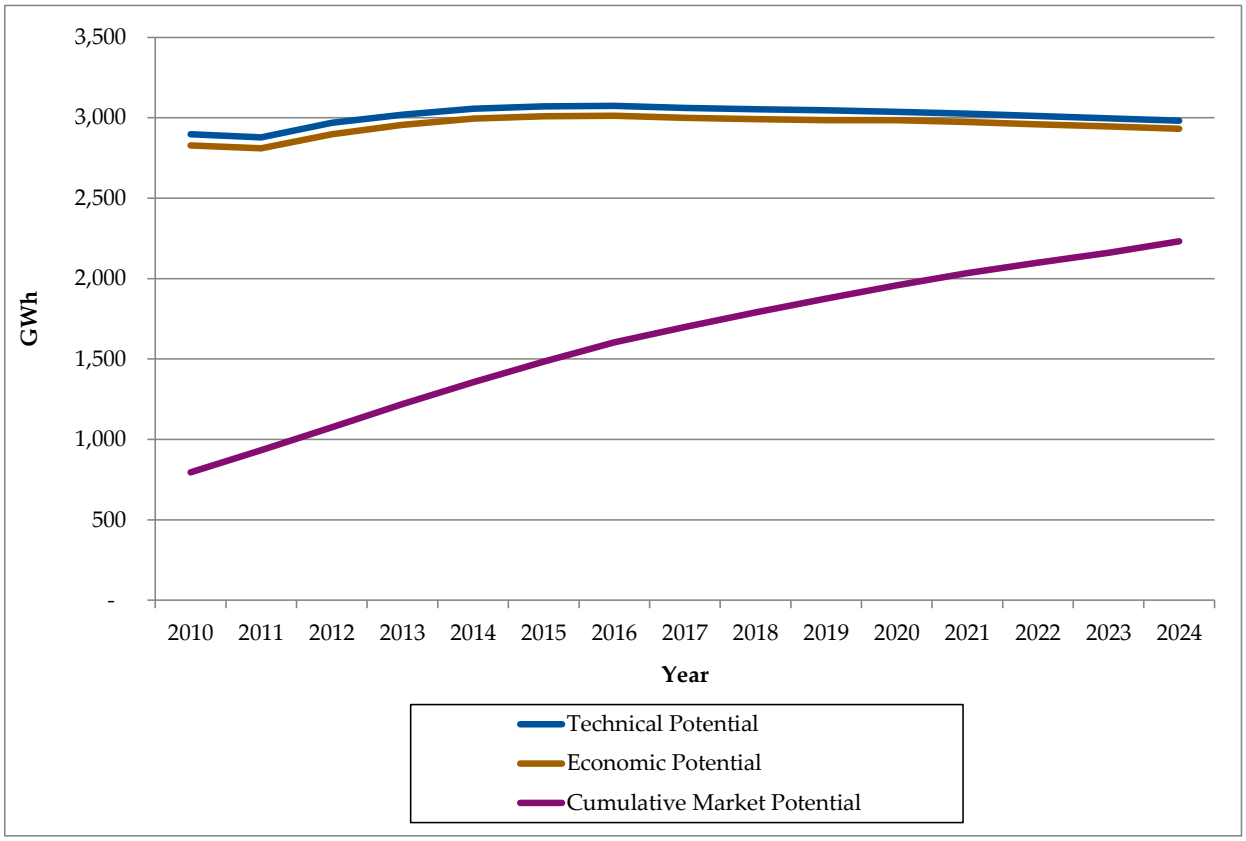
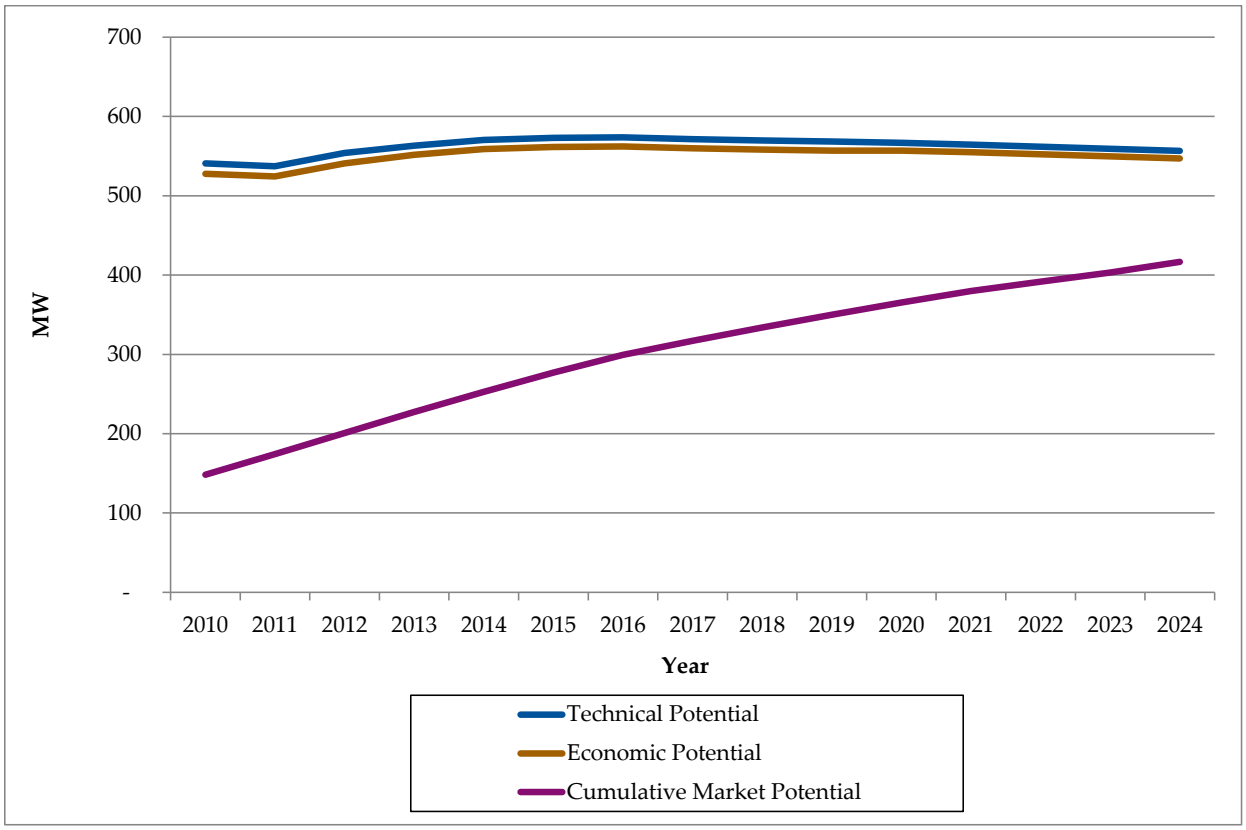


Figure 56 presents the technical, economic and cumulative market demand potential. All three lines follow the same paths as that of energy potential.

Figure 56. SCE Industrial Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



10.1.2 Incremental Market Potential

The incremental market potential in the industrial sector is presented in Figure 57. It is calculated to be approx. 135 GWh in 2010 and 90 GWh in 2024.

Figure 57. SCE Industrial Gross Incremental Market Potential for 2010 through 2024 (GWh)

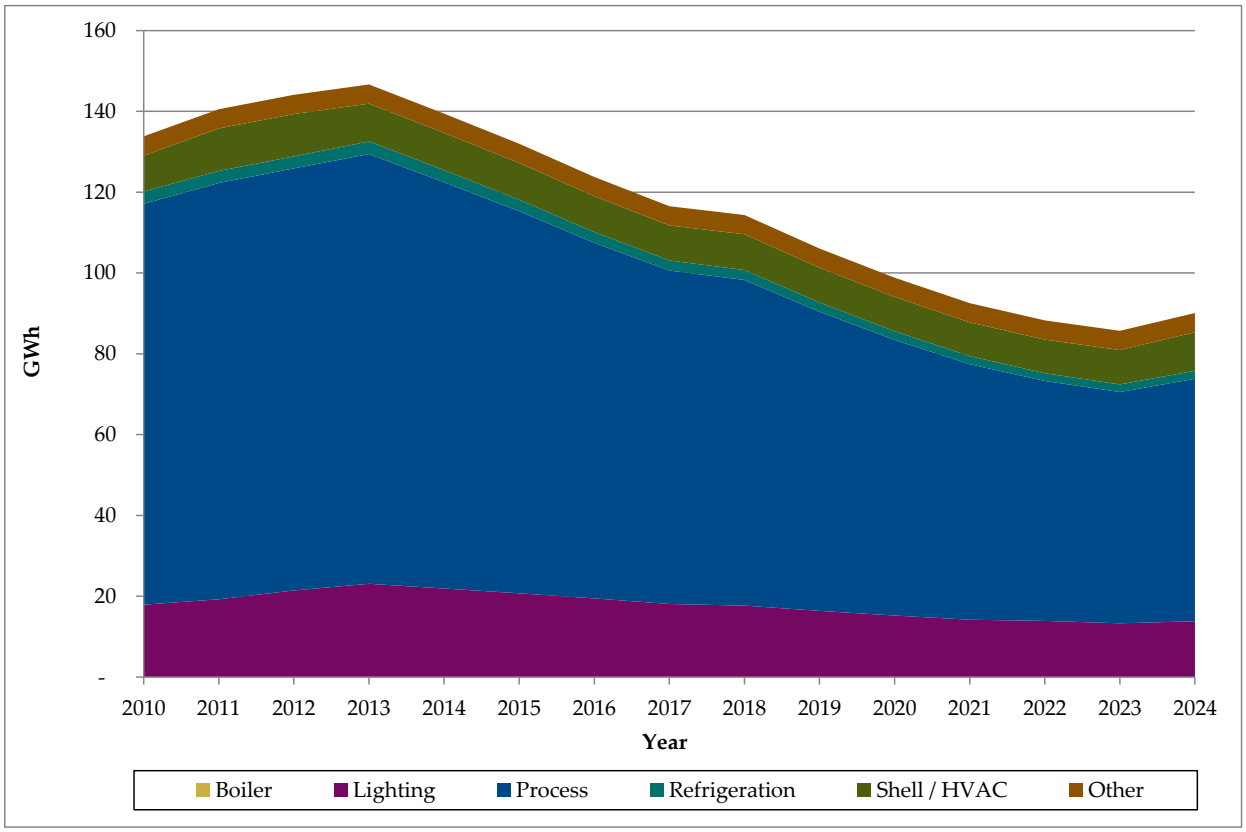
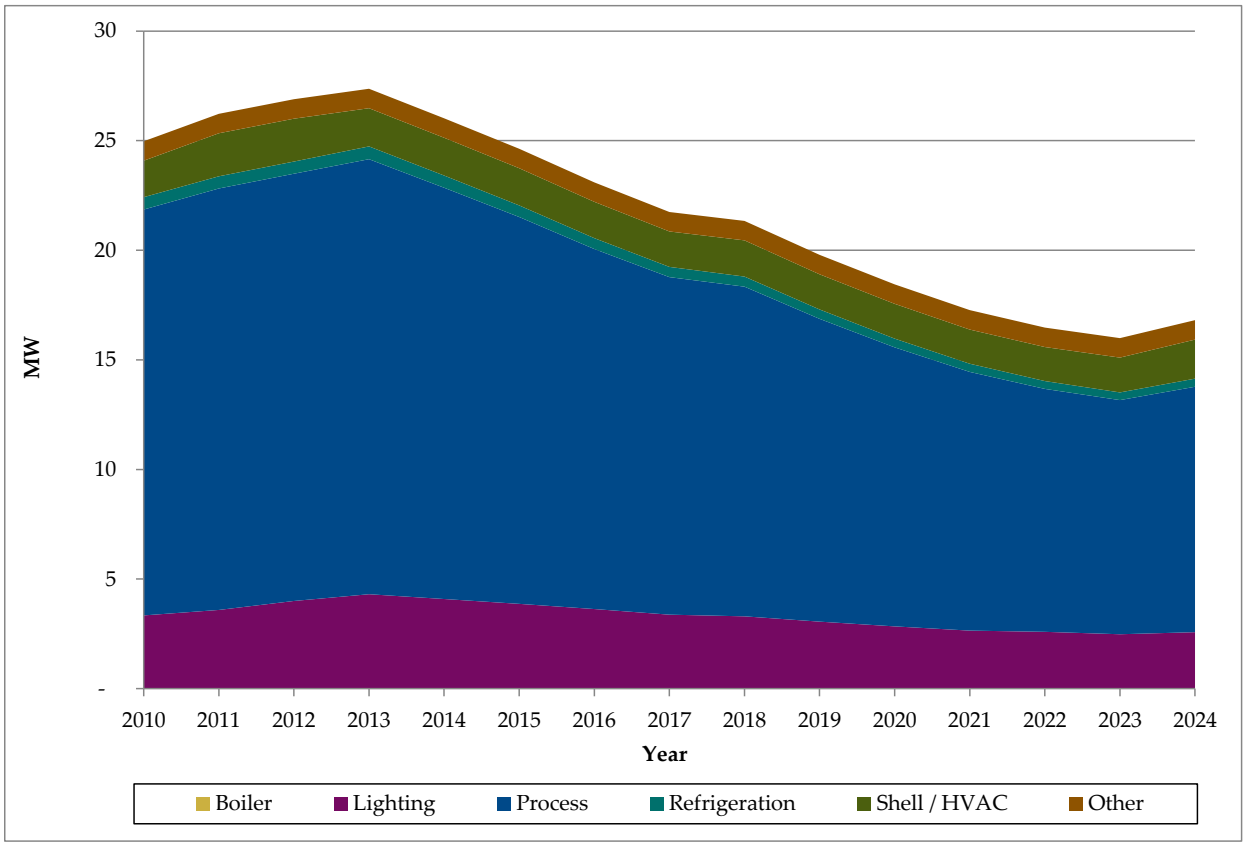


Figure 58. SCE Industrial Gross Incremental Market Potential for 2010 through 2024 (MW)



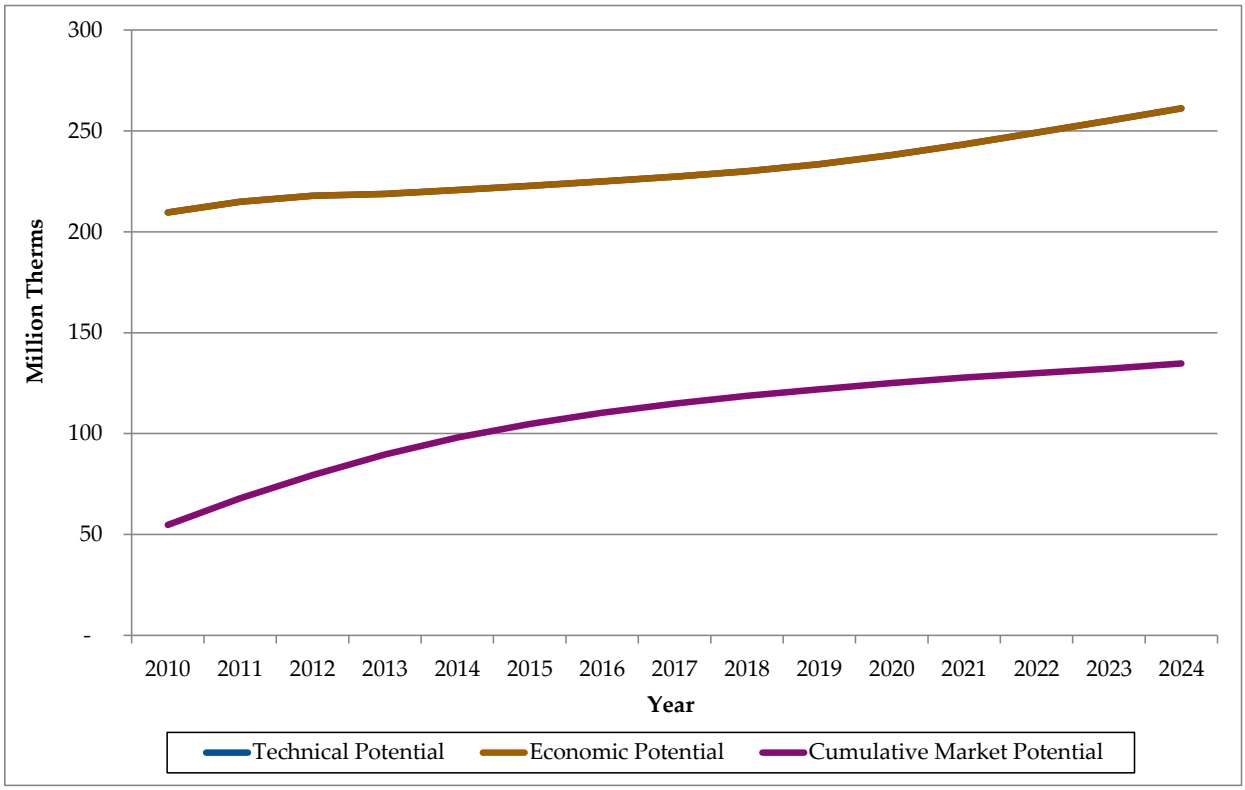
11 Energy Efficiency Potential in Existing SCG Industrial Buildings

11.1 Gas Efficiency Potential in Existing SCG Industrial Buildings

11.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 59 presents the industrial technical, economic, and cumulative market gas savings potential in SCG service territory. Technical and Economic energy potential are nearly identical at 210 million therms in 2010 and 260 million therms in 2024. Cumulative market savings potential increases from 50 million therms in 2010 to 135 million therms in 2024.

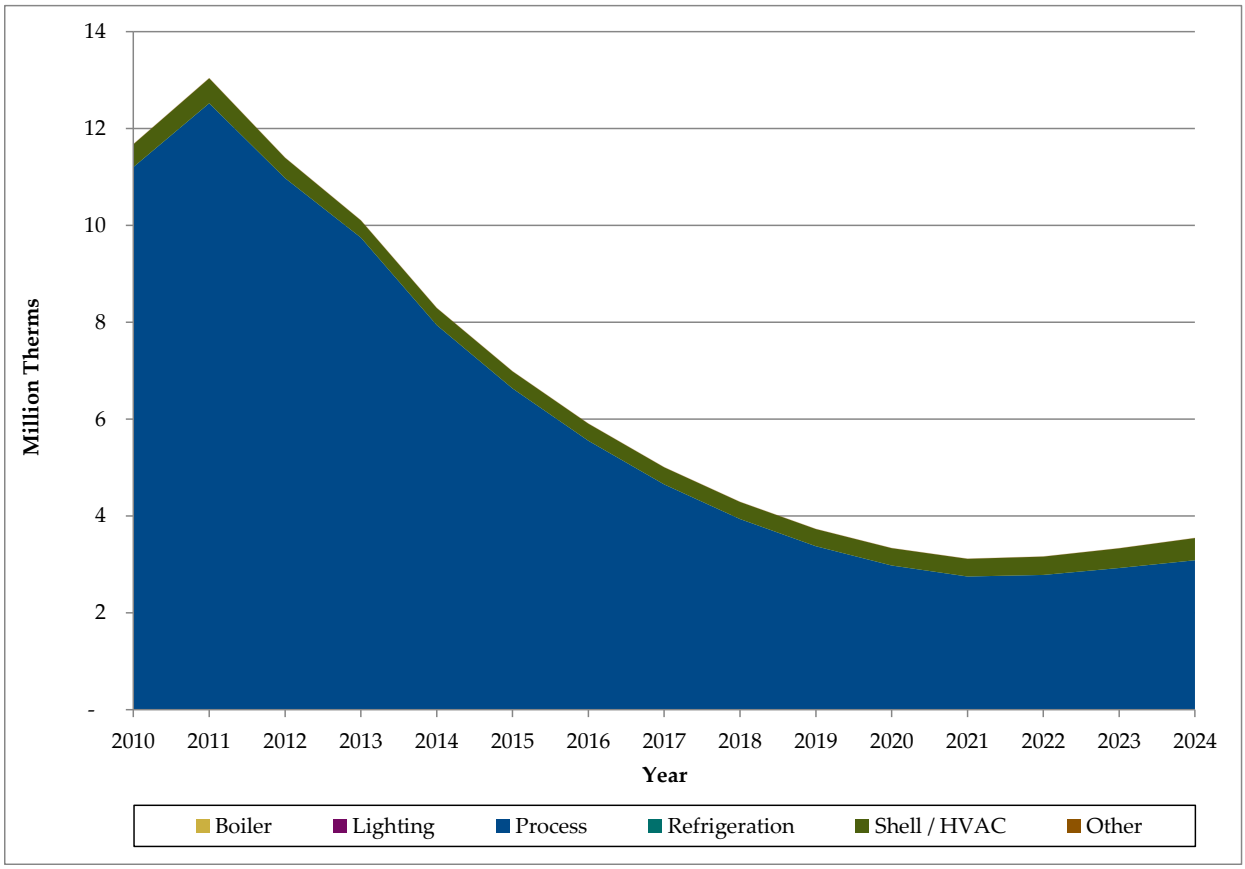
Figure 59. SCG Industrial Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



11.1.2 Gross Incremental Market Potential

Gross incremental market gas savings potential is calculated to be 12 million therms in 2010 and 3.75 million therms in 2024. Figure 60 presents the gross incremental market gas energy savings potential in industrial sector in SCG service territory.

Figure 60. SCG Industrial Gross Incremental Gas Potential for 2010 through 2024 (Million Therms)



12 Energy Efficiency Potential in Existing SDG&E Industrial Buildings

12.1 Electric Efficiency Potential in Existing SDG&E Industrial Buildings

12.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 61 presents the technical, economic, and cumulative market energy savings potential in the industrial sector in SDG&E territory. Technical and economic energy savings potential in the industrial sector are very similar, both starting at around 255 GWh and increasing to 290 GWh in 2024. Cumulative market energy savings potential increases 75 GWh in 2010 to around 220 GWh in 2024.

Figure 61. SDG&E Industrial Technical, Economic, and Cumulative Energy Potential for 2010 through 2024 (GWh)

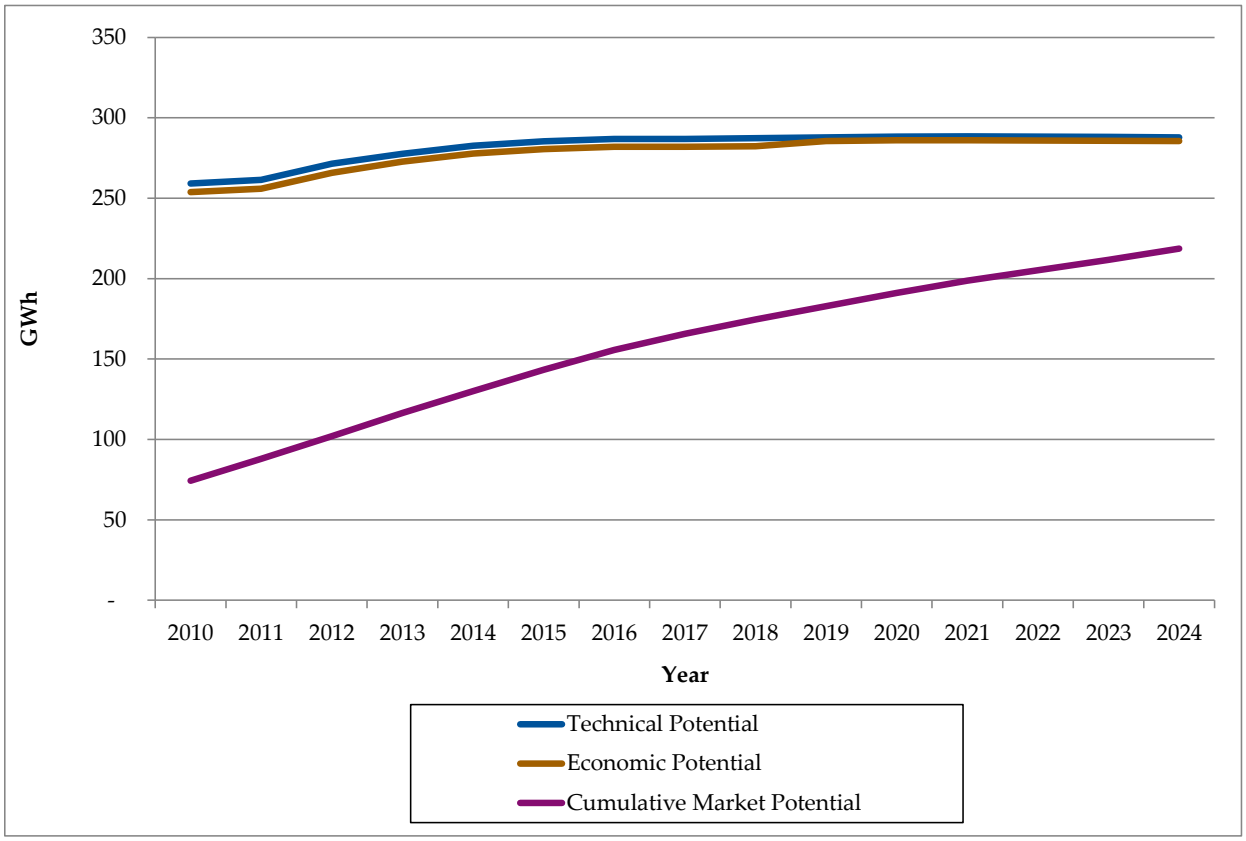
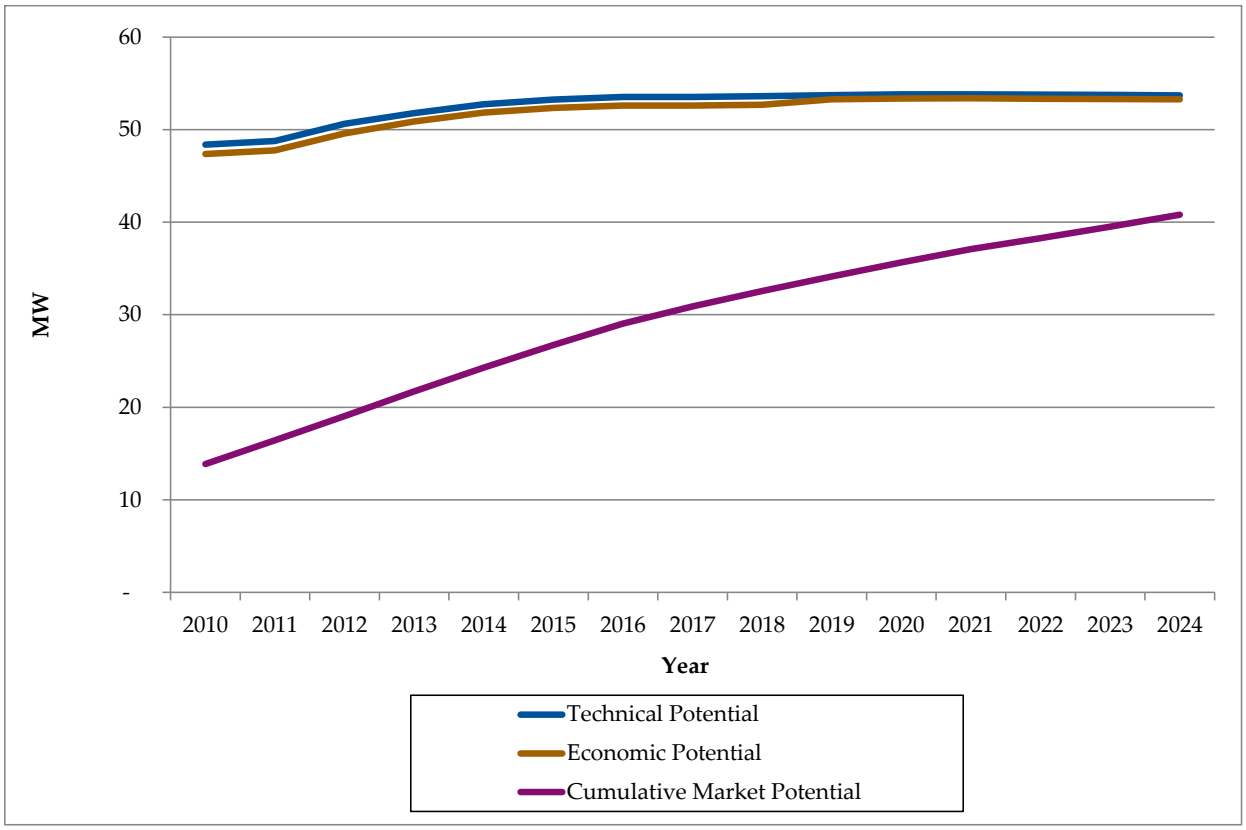


Figure 62 presents the technical, economic and cumulative market demand potential for SDG&E.

Figure 62. SDG&E Industrial Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



12.1.2 Incremental Market Potential

The incremental market potential in the industrial sector is presented in Figure 63. It is calculated to be approx. 14 GWh in 2010 and around 9 GWh in 2024.

Figure 63. SDG&E Industrial Gross Incremental Market Energy Potential for 2010 through 2024 (GWh)

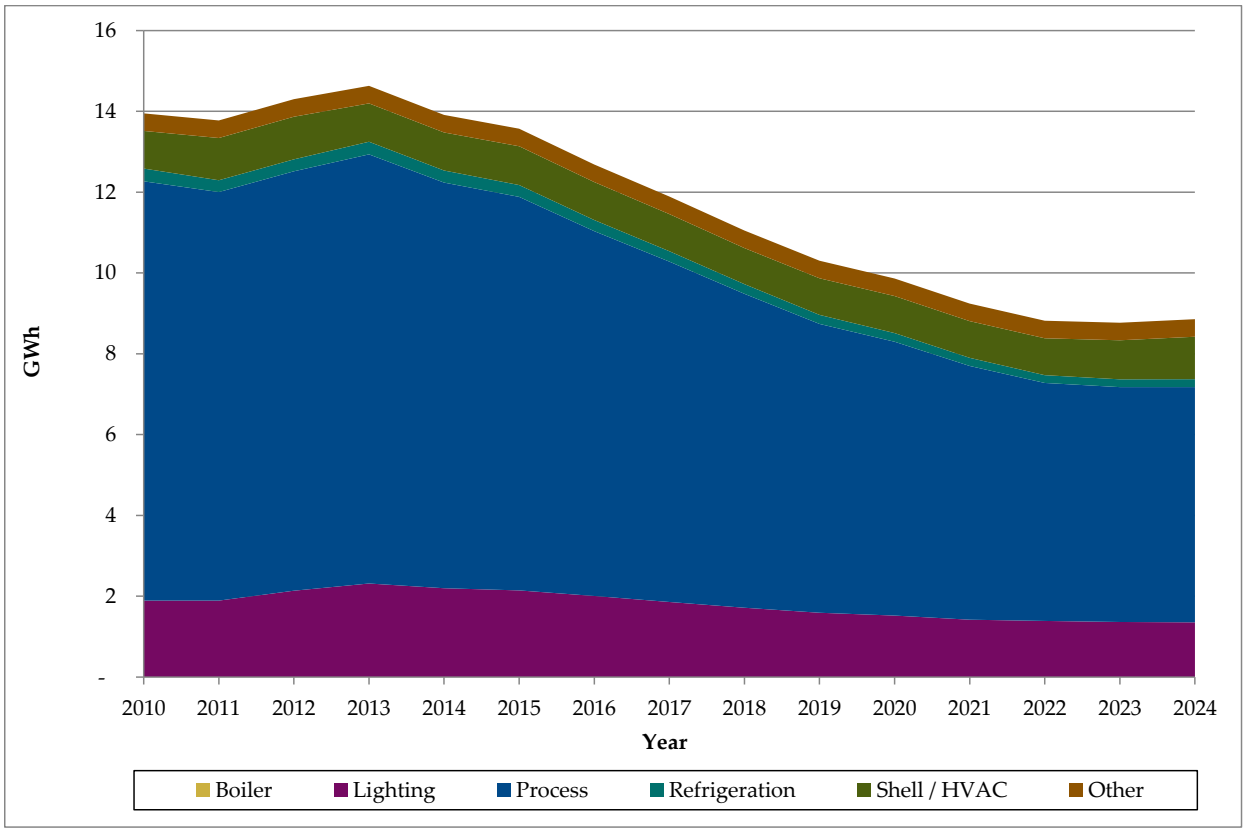
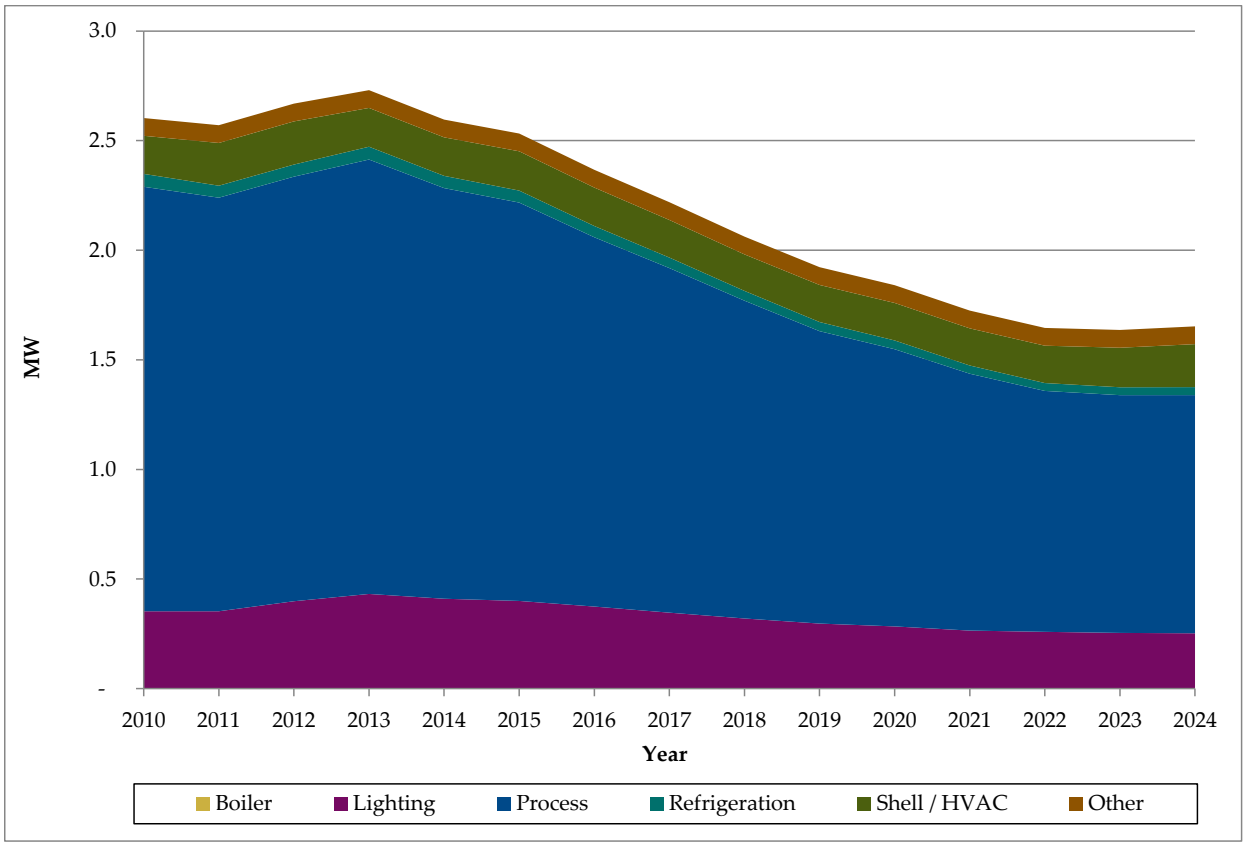


Figure 64 presents the incremental market demand potential.

Figure 64. SDG&E Industrial Gross Incremental Market Demand Potential for 2010 through 2024 (MW)

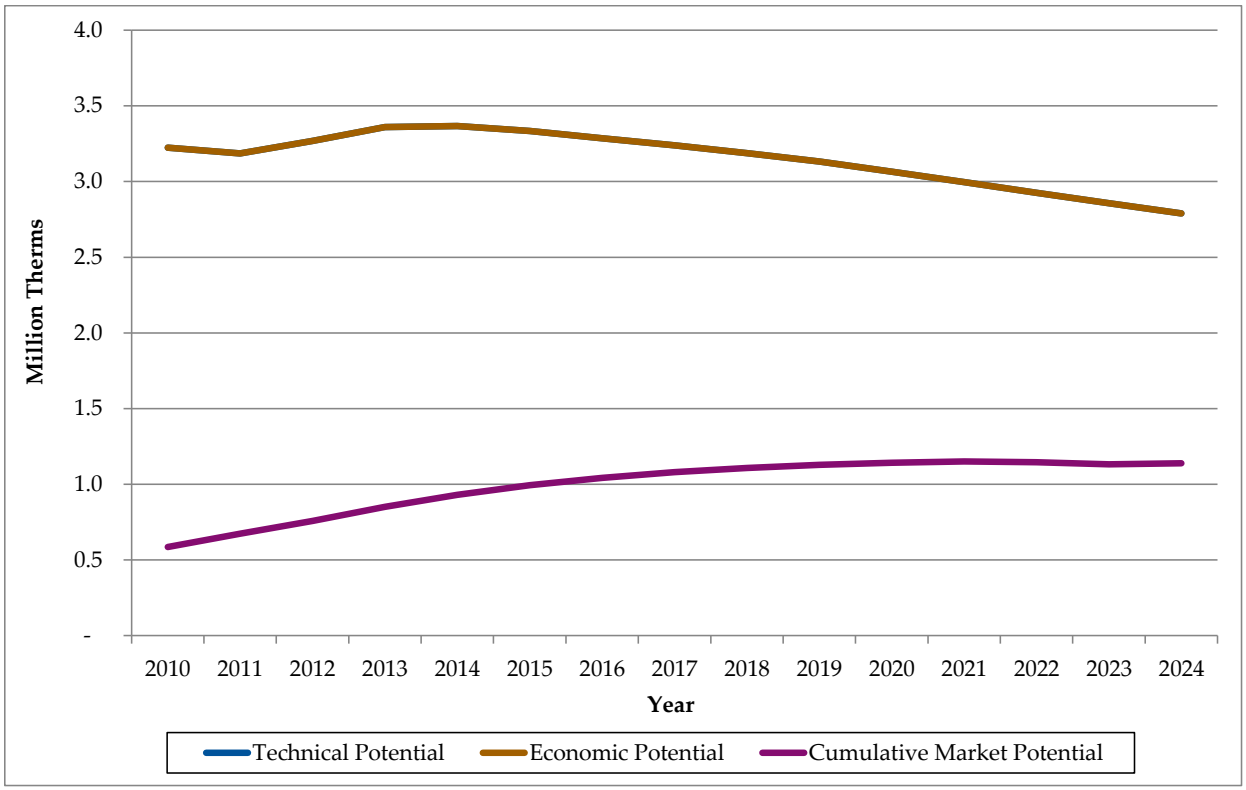


12.2 Gas Efficiency Potential in Existing SDG&E Industrial Buildings

12.2.1 Technical, Economic and Cumulative Market Savings Potential

Figure 65 presents the industrial technical, economic and cumulative gas savings potential in SDG&E service territory. Technical and economic energy savings potential are nearly identical, starting around 3.25 million therms in 2010 and ending around 2.75 million therms in 2024. The cumulative market potential increases from 0.5 million therms in 2010 to about 1.1 million therms in 2024.

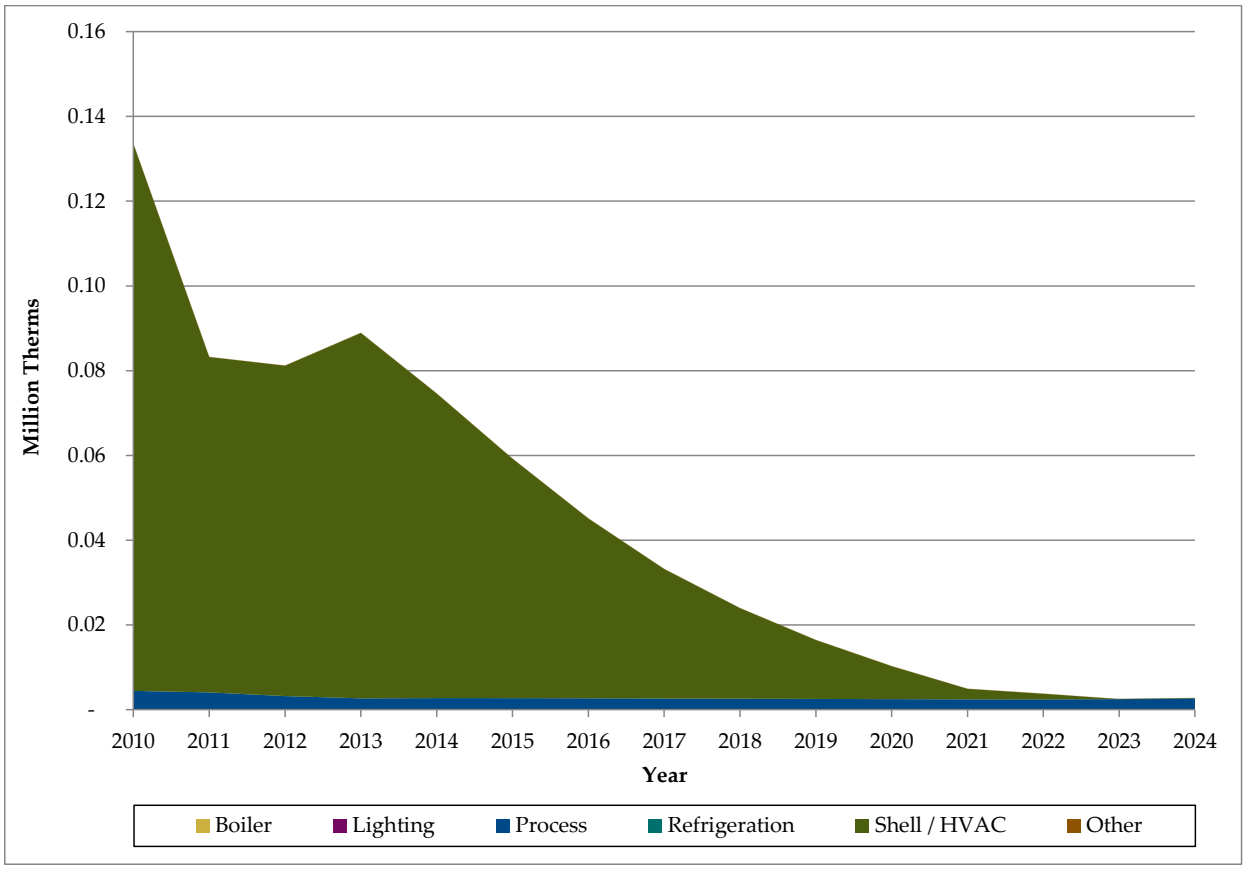
Figure 65. SDG&E Industrial Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



12.2.2 Incremental Market Potential

The incremental market potential in the industrial sector is presented in Figure 66. It is calculated to be approx. 0.13 million therms in 2010 and 0.005 million therms in 2024.

Figure 66. SDG&E Industrial Gross Incremental Market Gas Potential for 2010 through 2024 (Million Therms)



13 Energy Efficiency Potential in Existing PG&E Agricultural Buildings

13.1 Electric Efficiency Potential in Existing PG&E Agricultural Buildings

13.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 67Figure 49 presents the technical, economic and cumulative market energy savings potential in the agricultural sector of PG&E.

Figure 67. PG&E Agricultural Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

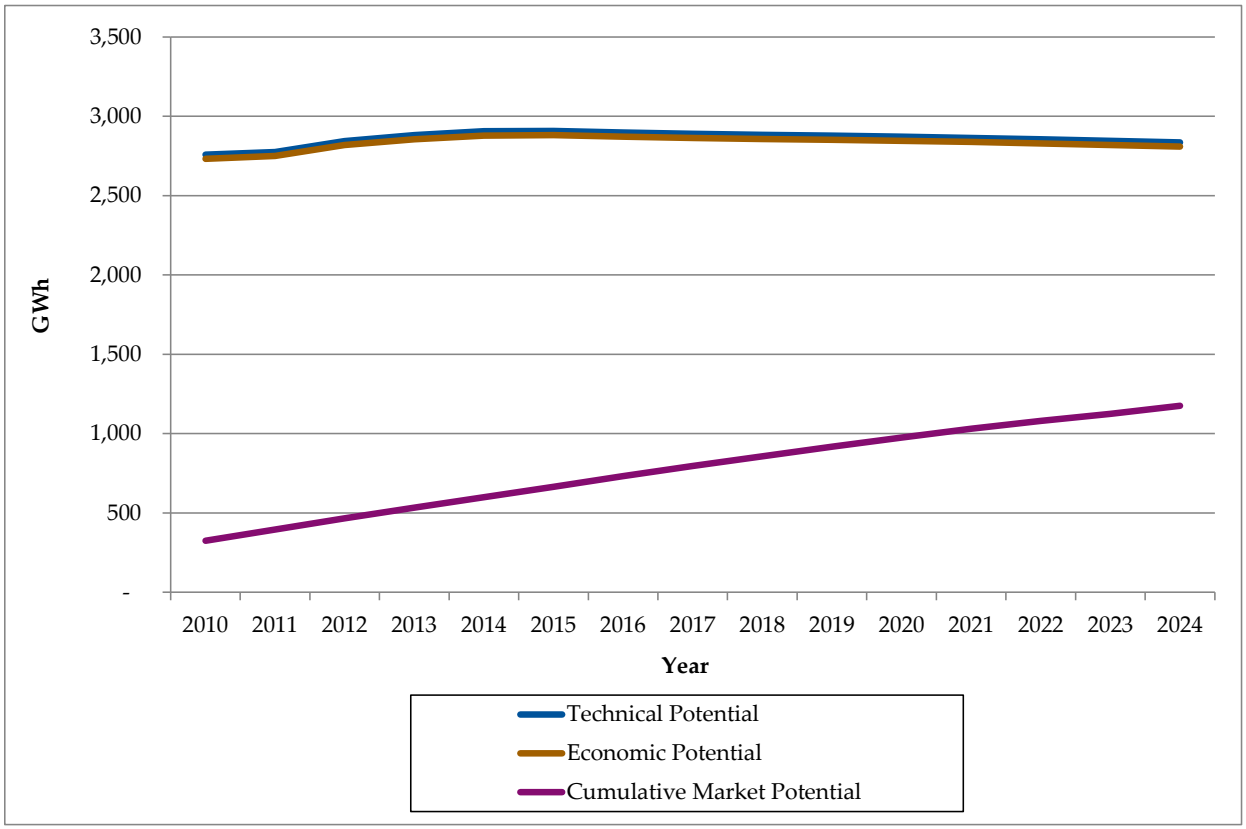
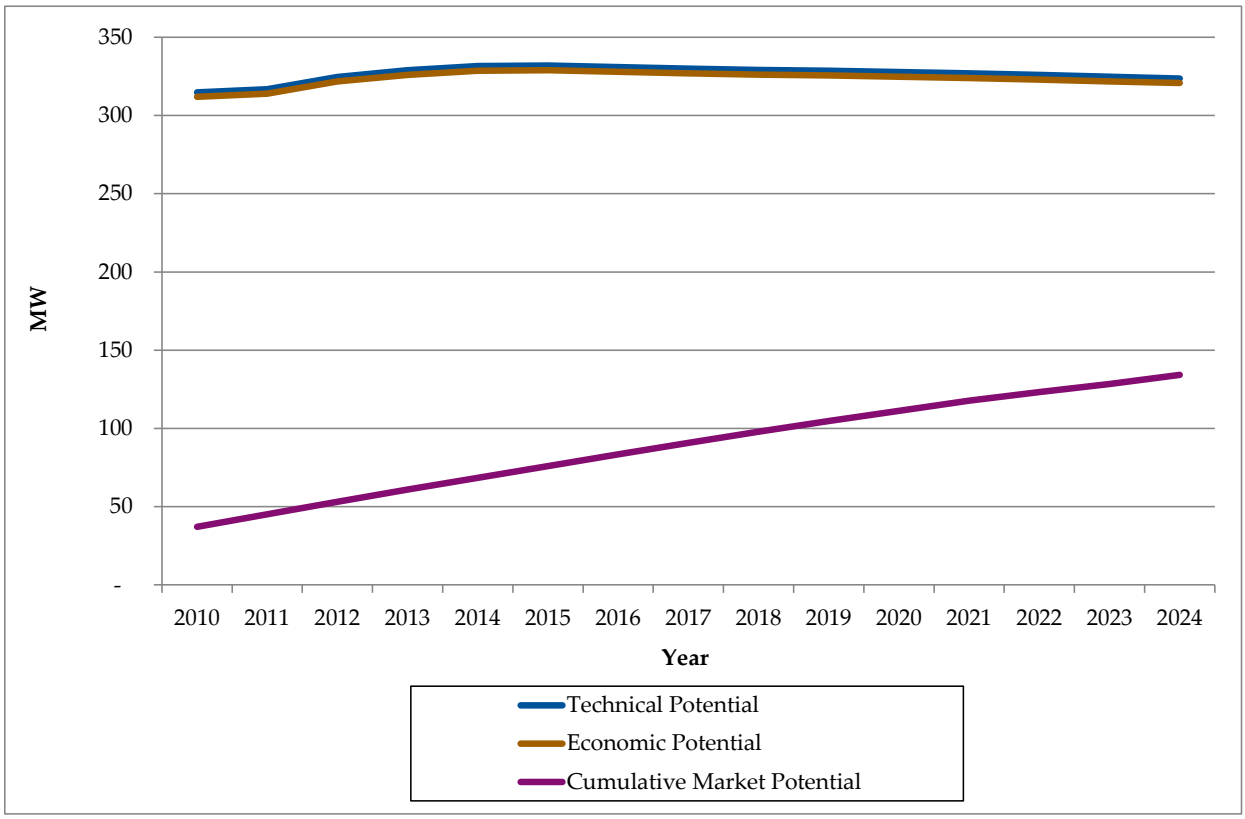


Figure 68 presents the technical, economic and cumulative market demand potential for the agricultural sector in PG&E territory.

Figure 68. PG&E Agricultural Technical, Economic, and Cumulative Market Potential for 2010 through 2024 (MW)



13.1.2 Incremental Market Potential

Figure 69 presents the incremental market energy potential for the PG&E Agricultural sector.

Figure 69. PG&E Agricultural Gross Incremental Market Energy Potential for 2010 through 2024 (GWh)

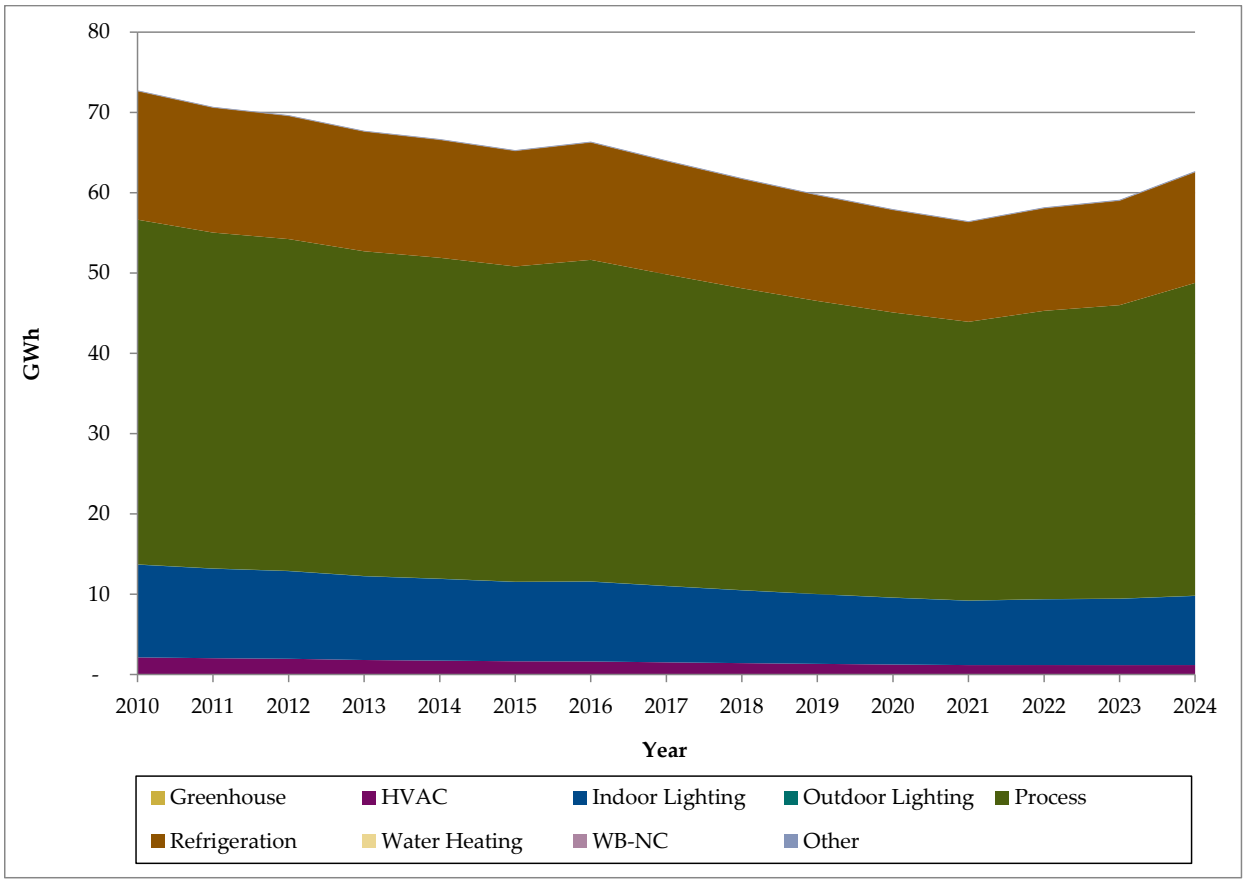
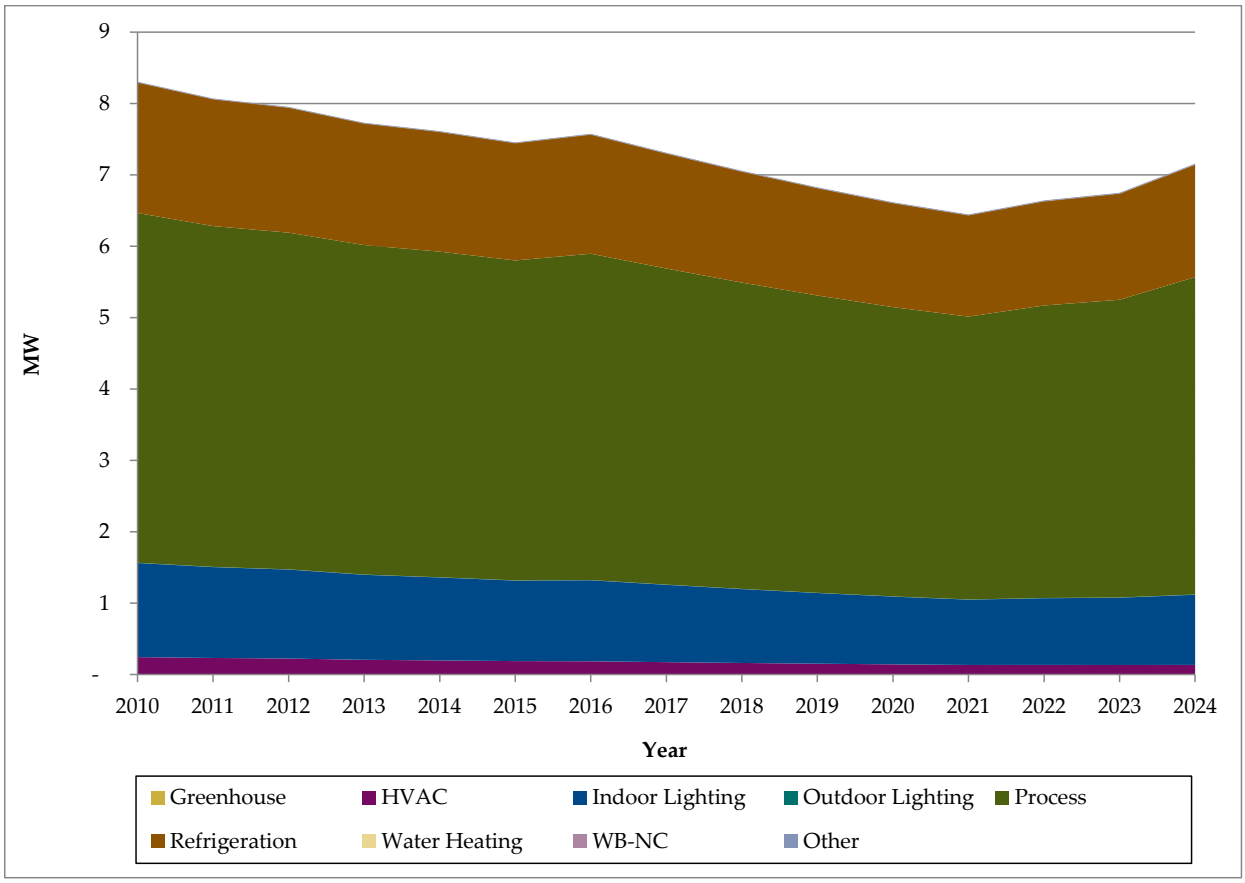


Figure 70 presents the incremental market demand potential for the PG&E Agricultural sector.

Figure 70. PG&E Agricultural Gross Incremental Market Demand Potential for 2010 through 2024 (MW)

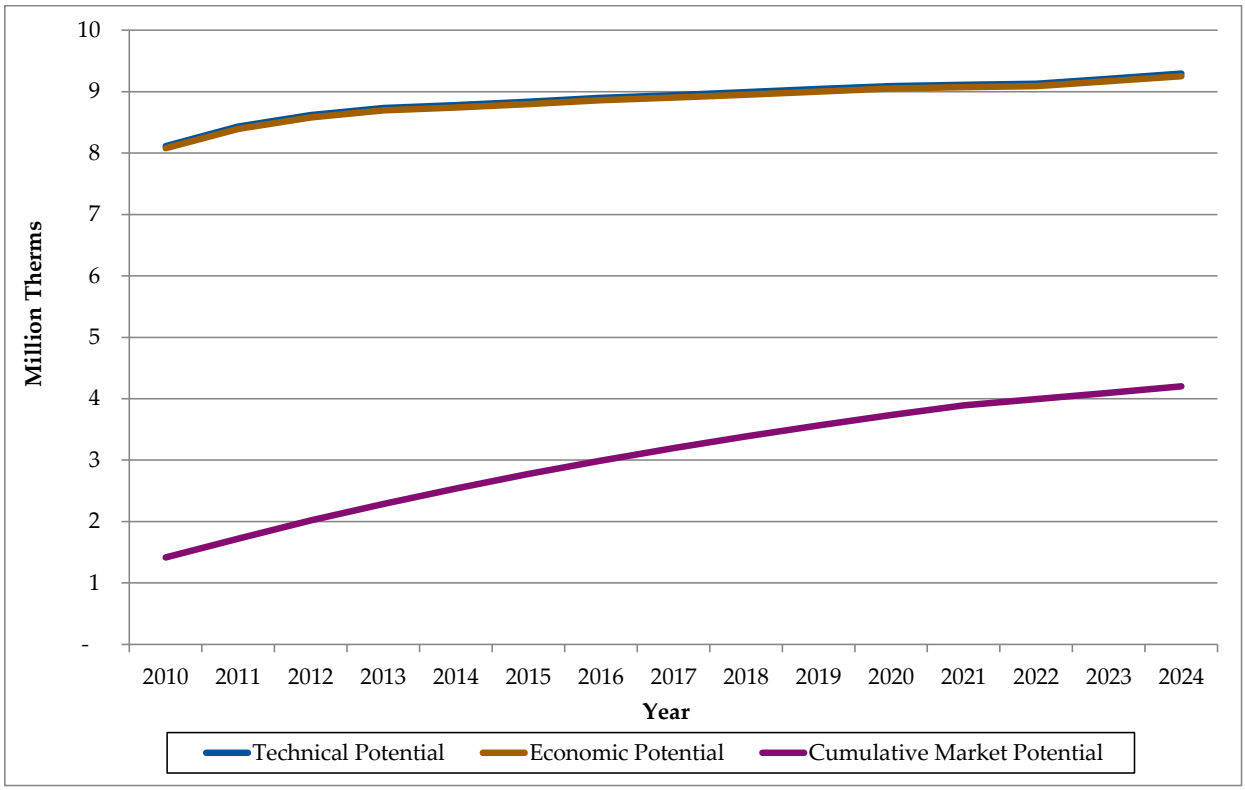


13.2 Gas Efficiency Potential in Existing PG&E Agricultural Buildings

13.2.1 Technical, Economic and Cumulative Market Savings Potential

Figure 71 presents the agricultural technical, economic, and cumulative market gas savings potential in PG&E service territory.

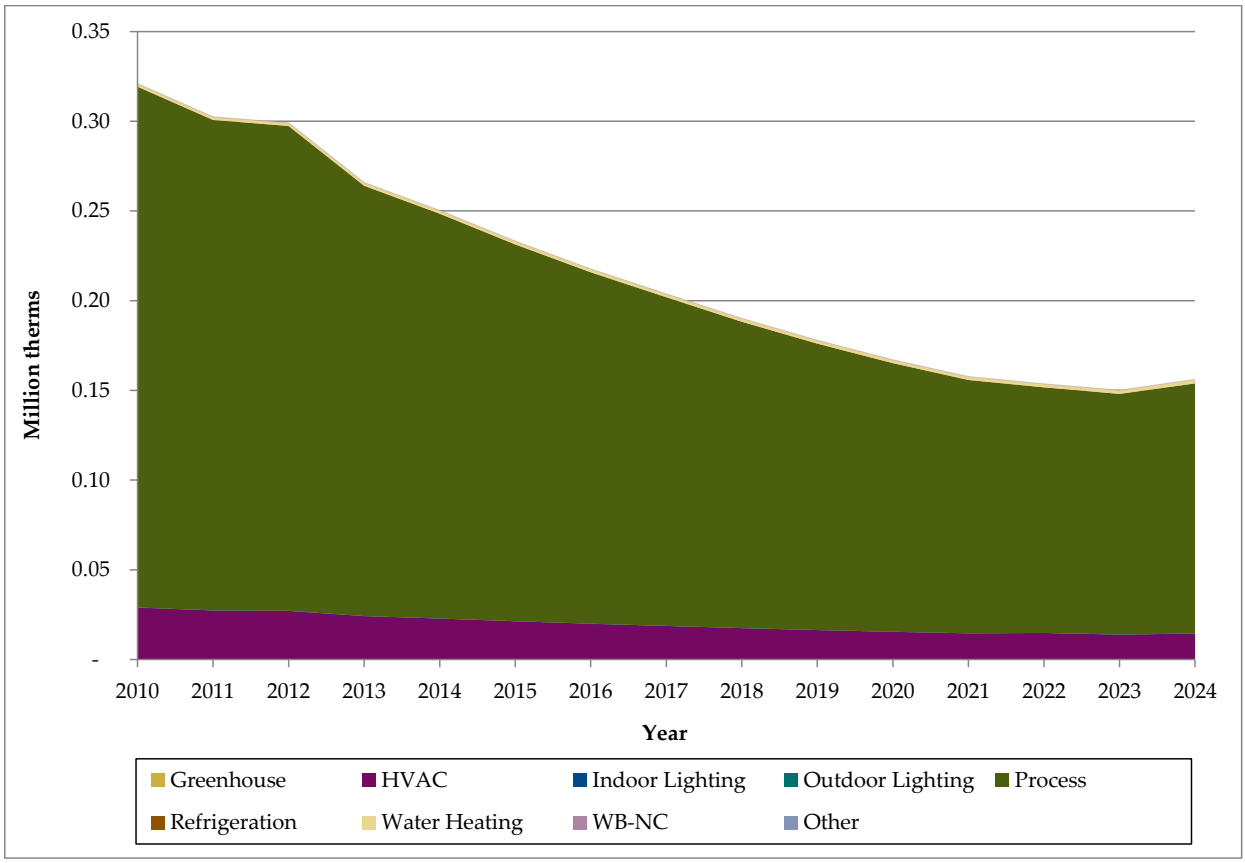
Figure 71. PG&E Agricultural Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



13.2.2 Gross Incremental Market Potential

Figure 72 presents the gross incremental market gas energy savings potential in agricultural sector in PG&E service territory.

Figure 72. PG&E Agricultural Gross Incremental Market Gas Potential for 2010 through 2024 (Million Therms)



14 Energy Efficiency Potential in Existing SCE Agricultural Buildings

14.1 Electric Efficiency Potential in Existing SCE Agricultural Buildings

14.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 73 presents the technical, economic and cumulative market energy savings potential in the Agricultural sector in SCE territory.

Figure 73. SCE Agricultural Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

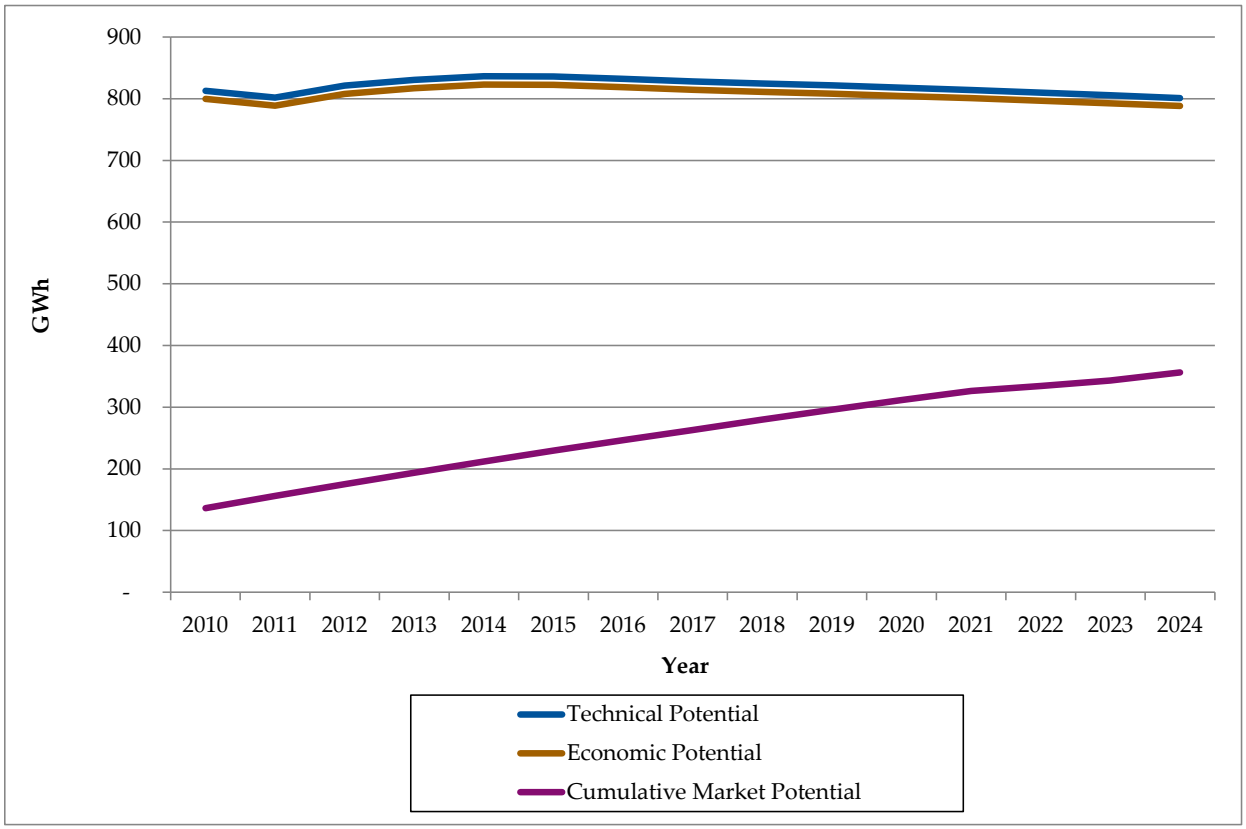
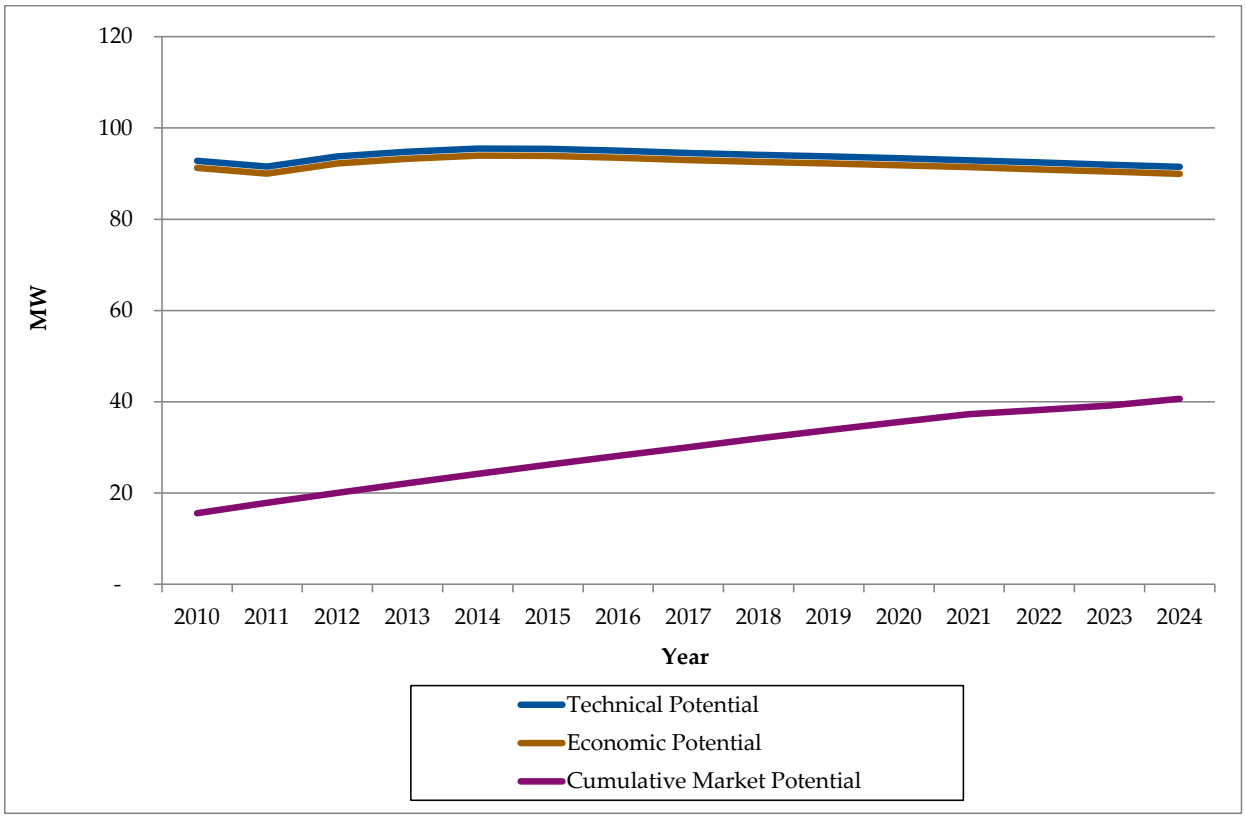


Figure 74 presents the technical, economic and cumulative market demand potential for the agricultural sector of SCE.

Figure 74. SCE Agricultural Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



14.1.2 Incremental Market Potential

Figure 75 presents the agricultural incremental market energy potential for SCE. Figure 76 shows the incremental market demand potential for the agricultural sector of PG&E

Figure 75. SCE Agricultural Gross Incremental Market Potential for 2010 through 2024 (GWh)

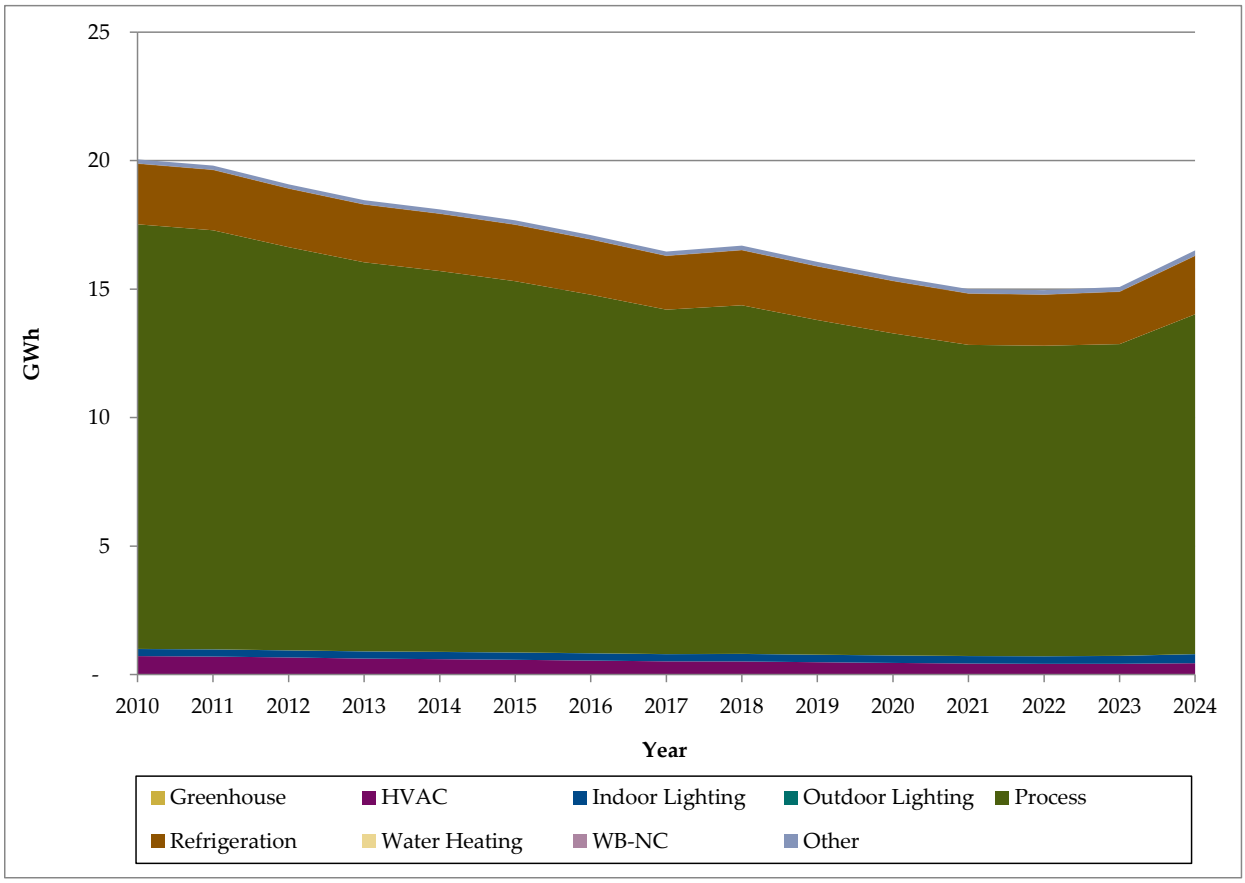
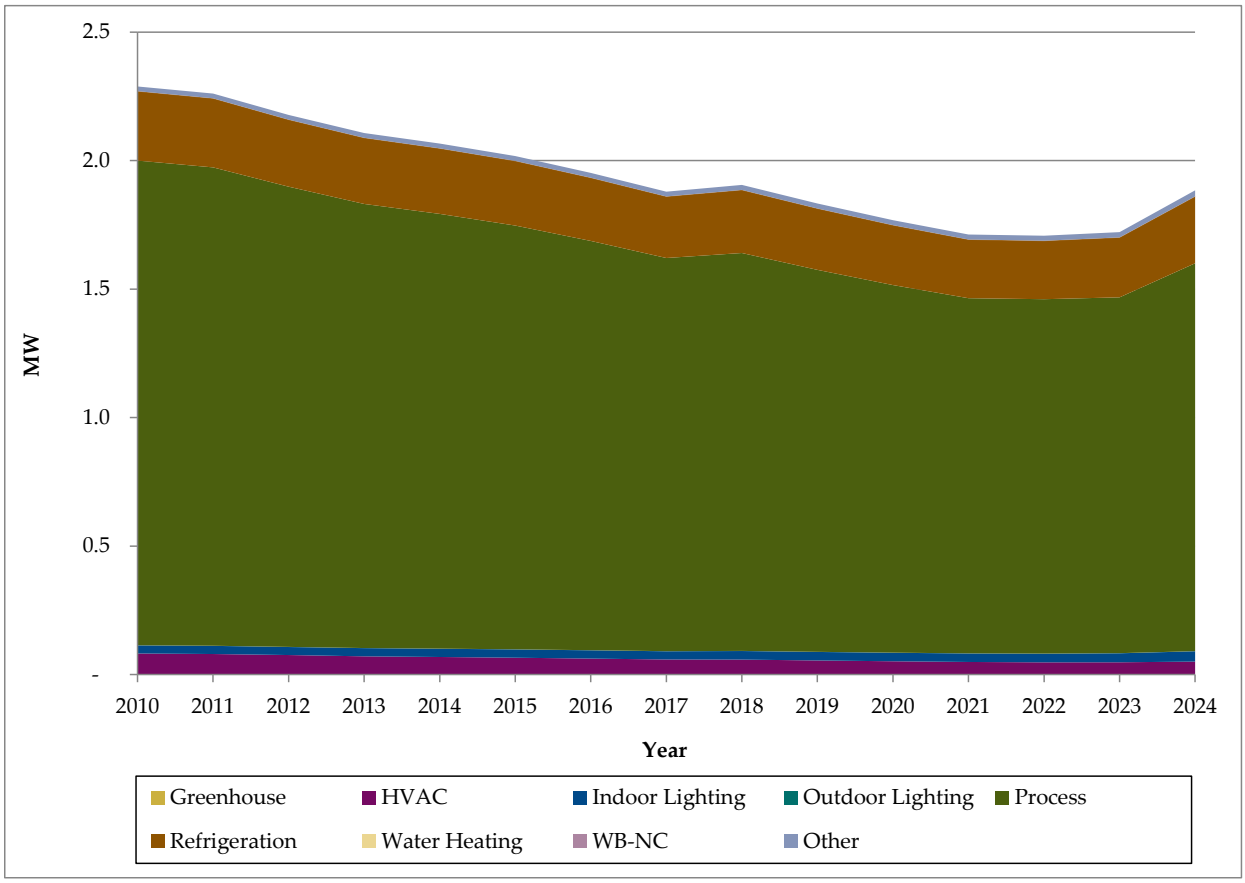


Figure 76. SCE Agricultural Gross Incremental Market Potential for 2010 through 2024 (MW)



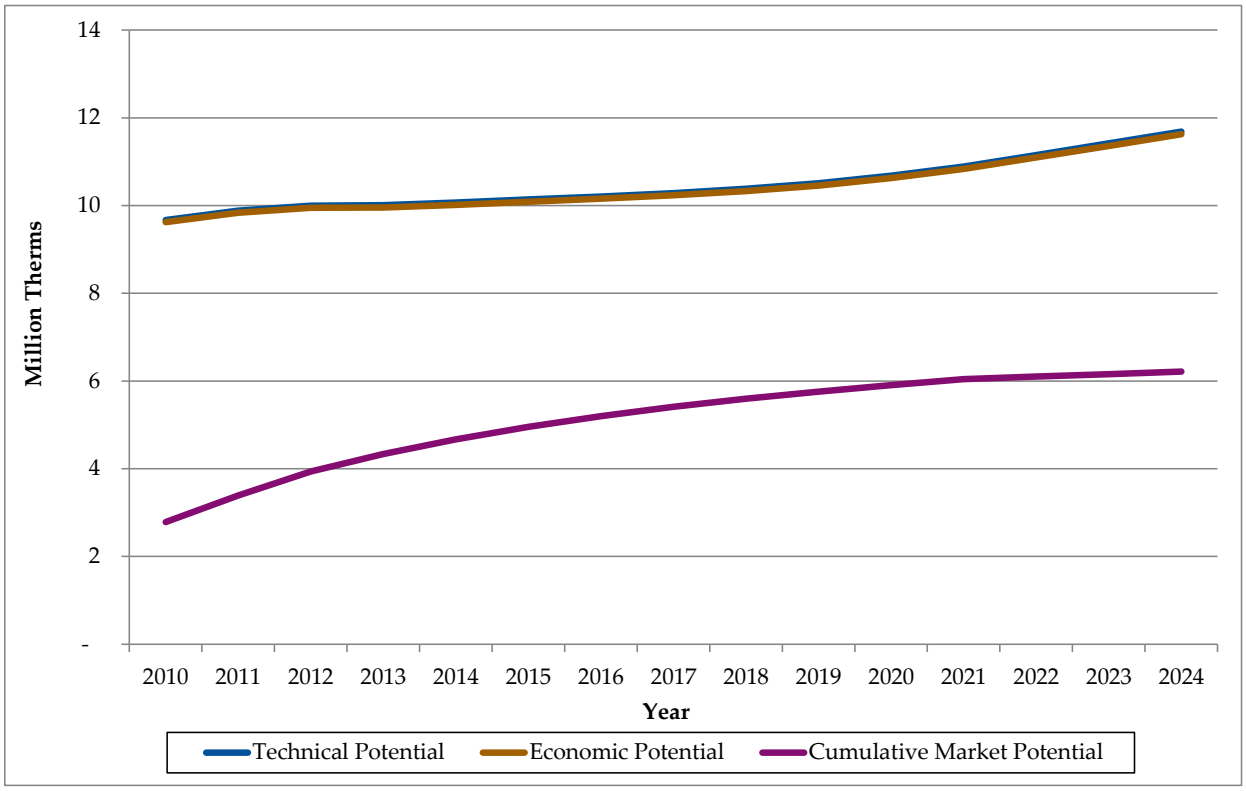
15 Energy Efficiency Potential in Existing SCG Agricultural Buildings

15.1 Gas Efficiency Potential in Existing SCG Agricultural Buildings

15.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 77 presents the agricultural technical, economic and cumulative market gas savings potential in SCG service territory.

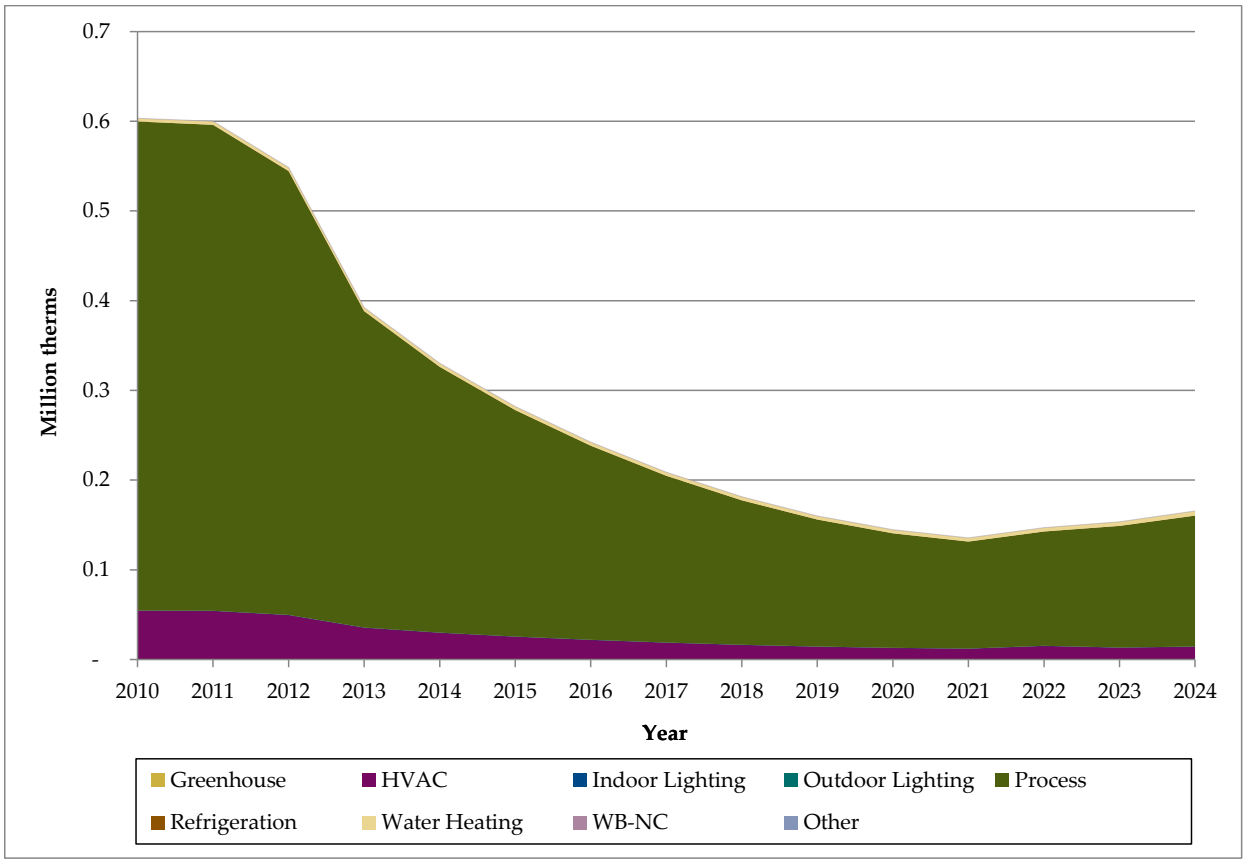
Figure 77. SCG Agricultural Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Million Therms)



15.1.2 Gross Incremental Market Potential

Figure 78 presents the gross incremental market gas energy savings potential in agricultural sector in SCG service territory.

Figure 78. SCG Agricultural Gross Incremental Market Gas Potential for 2010 through 2024 (Million Therms)



16 Energy Efficiency Potential in Existing SDG&E Agricultural Buildings

16.1 Electric Efficiency Potential in Existing SDG&E Agricultural Buildings

16.1.1 Technical, Economic and Cumulative Market Savings Potential

Figure 79 presents the technical, economic and cumulative market energy savings potential in the agricultural sector in SDG&E territory.

Figure 79. SDG&E Agricultural Technical, Economic, and Cumulative Market Energy Potential for 2010 through 2024 (GWh)

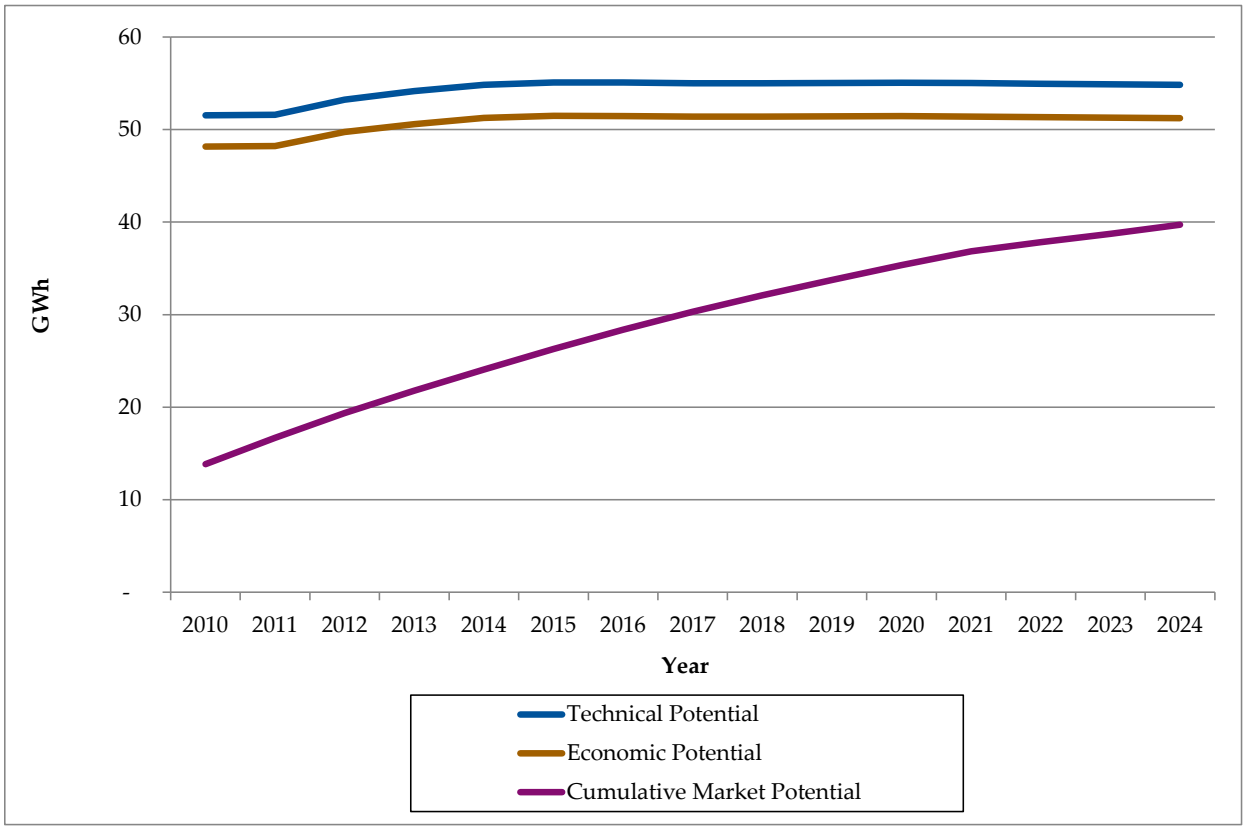
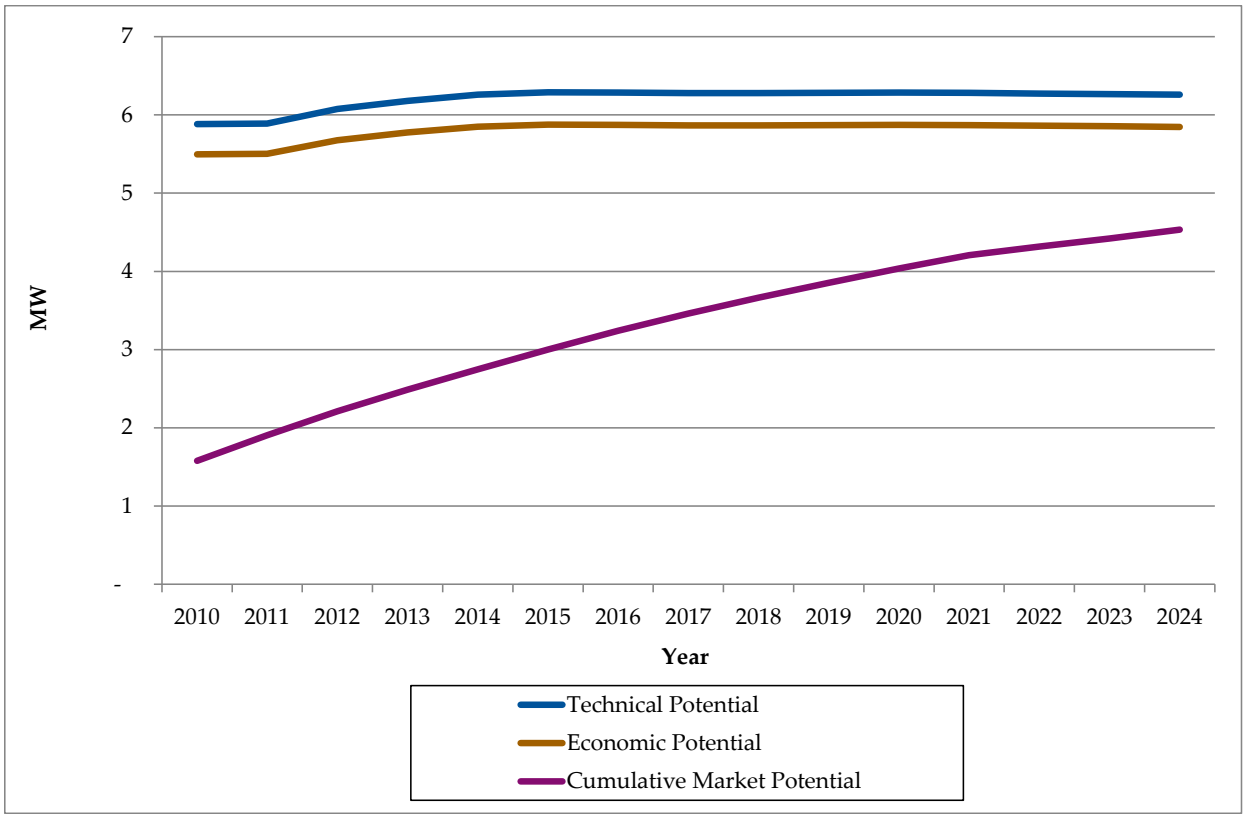


Figure 80 presents the technical, economic and cumulative market demand potential for the agricultural sector of SDG&E.

Figure 80. SDG&E Agricultural Technical, Economic, and Cumulative Market Demand Potential for 2010 through 2024 (MW)



16.1.2 Incremental Market Potential

Figure 81 presents the incremental market energy potential for the agricultural sector of SDG&E.

Figure 81. SDG&E Agricultural Gross Incremental Market Energy Potential for 2010 through 2024 (GWh)

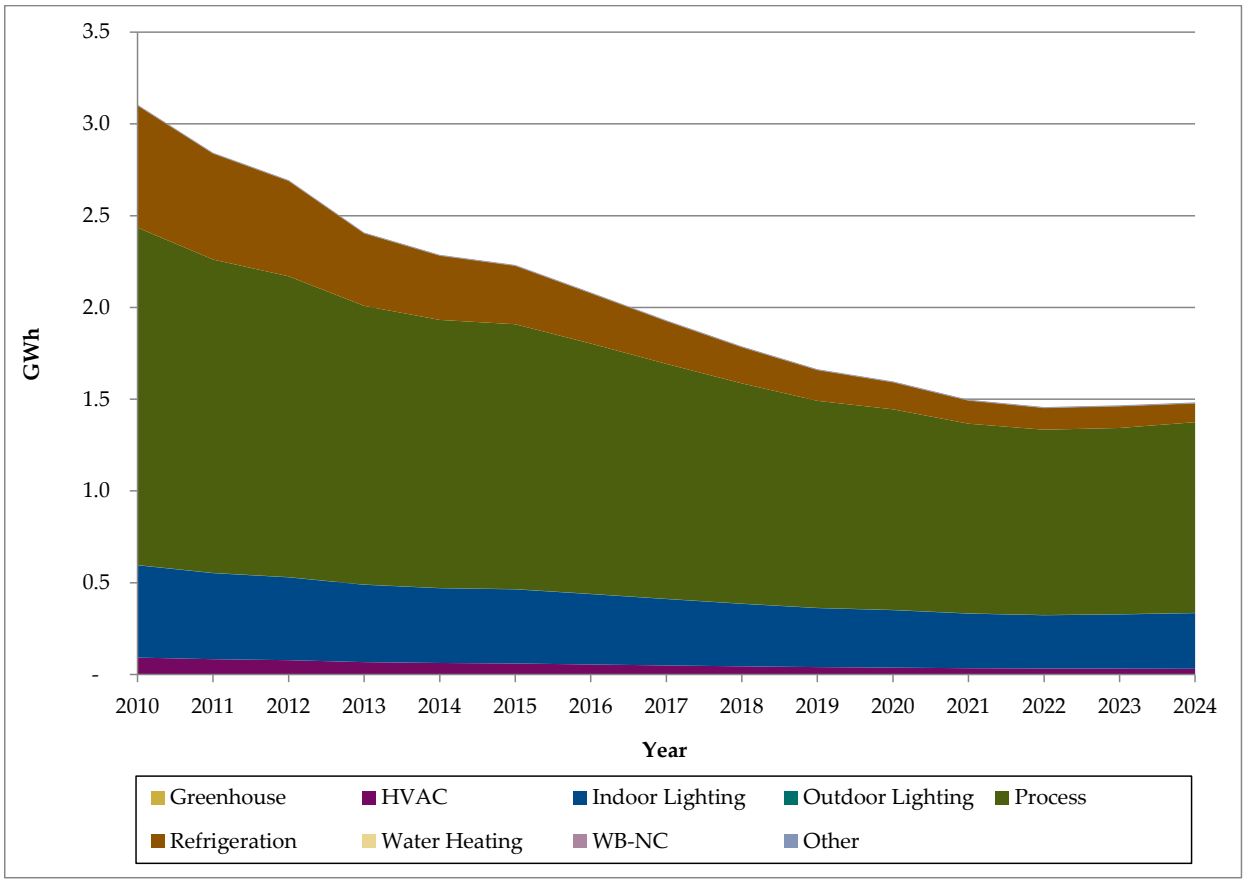
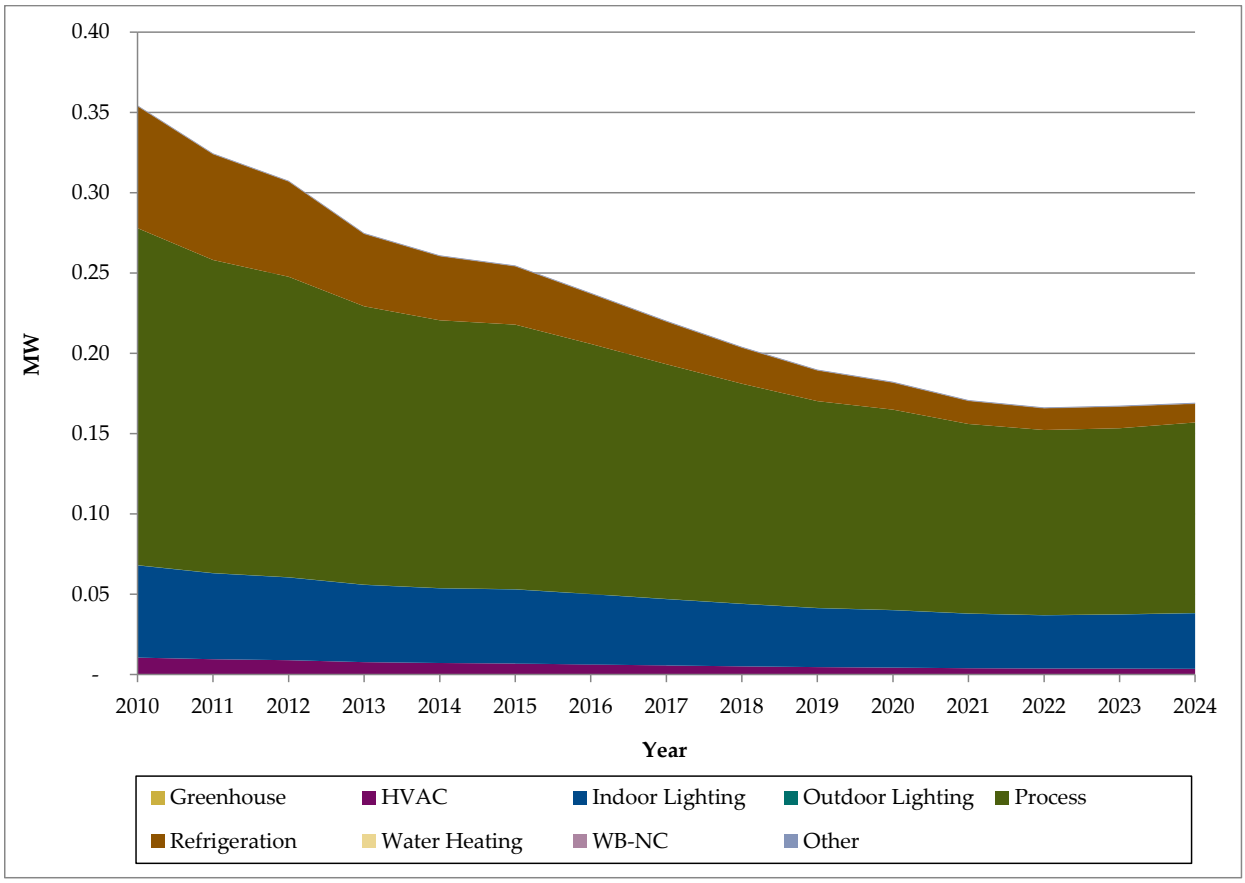


Figure 82 presents the incremental market demand potential for the agricultural sector of SDG&E.

Figure 82. SDG&E Agricultural Gross Incremental Market Demand Potential for 2010 through 2024 (MW)

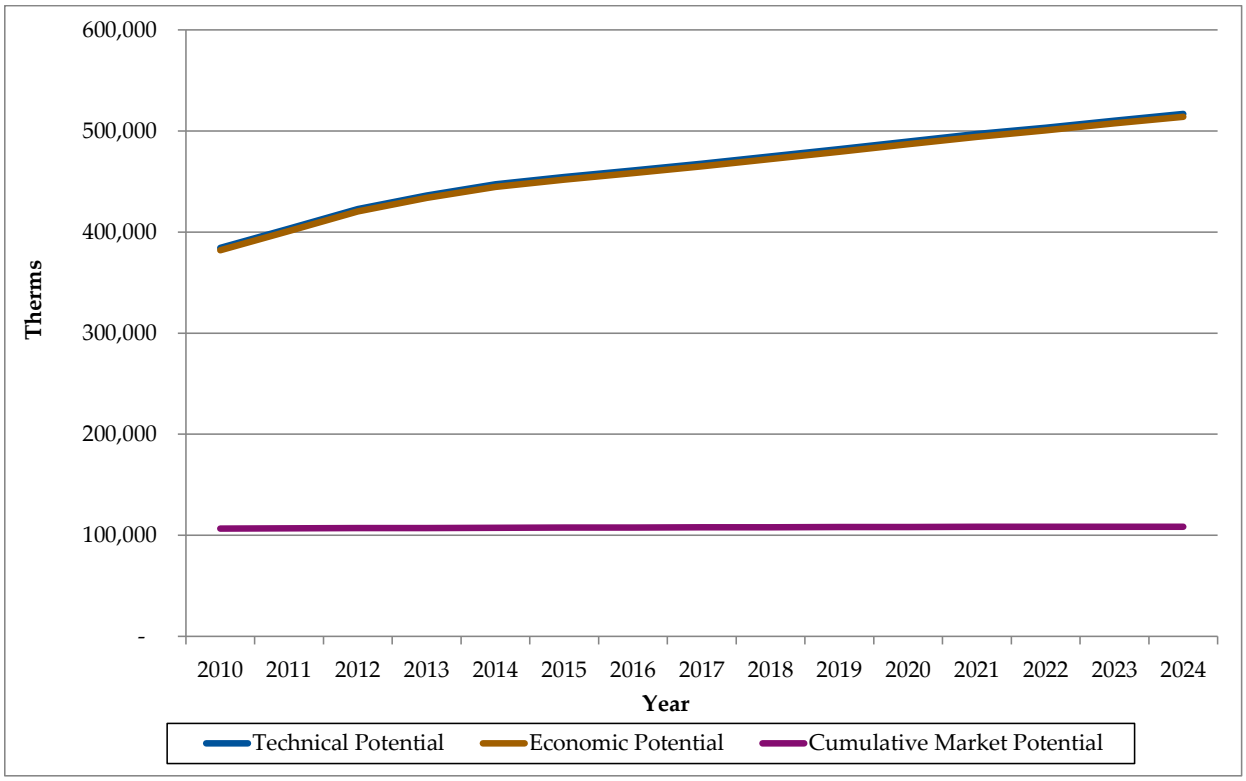


16.2 Gas Efficiency Potential in Existing SDG&E Agricultural Buildings

16.2.1 Technical, Economic and Cumulative Market Savings Potential

Figure 83 presents the agricultural technical, economic and cumulative market gas savings potential in the SDG&E service territory.

Figure 83. SDG&E Agricultural Technical, Economic, and Cumulative Market Gas Potential for 2010 through 2024 (Therms)



16.2.2 Incremental Market Potential

Figure 84 presents the incremental market gas potential in the agricultural sector of SDG&E. The erratic nature of the savings projects is due in part to the small agricultural population in the service territory.

Figure 84. SDG&E Agricultural Gross Incremental Market Gas Potential for 2010 through 2024 (Therms)